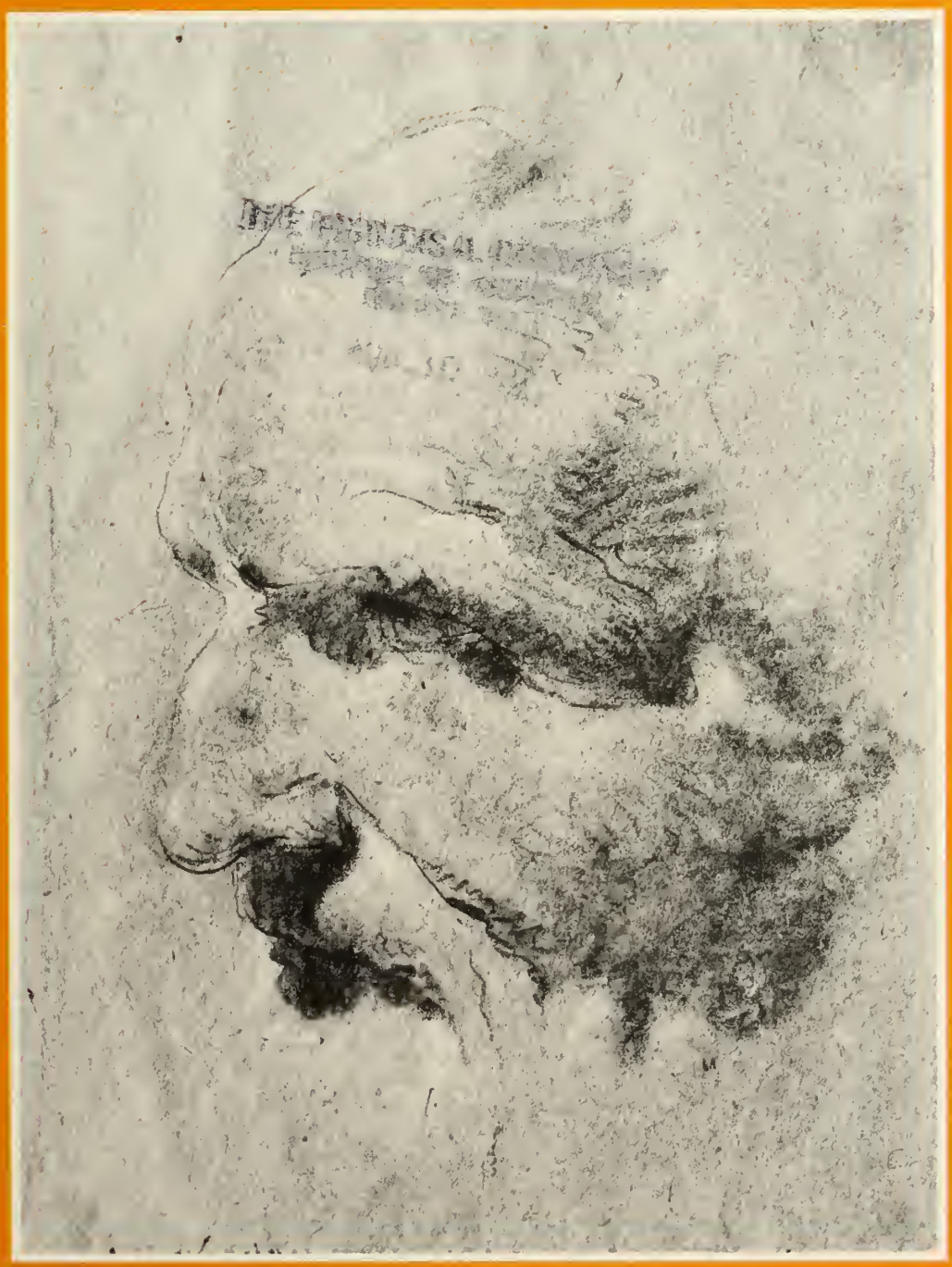
COUNTWAY LIBRARY
3 2044 115 035 446

RHODE ISLAND MEDICAL JOURNAL

May 1991

Volume 74, Number 5



/FRANCIS A COUNTWAY LIB OF MED
EXCHANGE OFFICE
10 SHATTUCK STREET
BOSTON MA 02115

Surgery in the Elderly

WE HAVEN'T LOST A CUSTOMER IN FIVE YEARS BECAUSE WE STAND BY WHAT WE SELL.

Customer satisfaction means everything to us. So you can be darn sure that a computer system designed and installed by Health Information Systems, Inc. will continue to perform. Day after day, year after year.

We fulfill that promise in a number of ways. One is by keeping skilled technicians by the phones from morning until night, so your questions are answered fast. Another is remote diagnostics. We can actually operate your computer from any H I S Regional Center, placing your system in expert hands with a simple phone call.

Most important of all, when you need service that requires a visit to your office, we will be there. Fast. In fact, if we cannot be on-site, inside your office in minutes, we're too far away. And we would have to decline the opportunity to do business until an H I S office opens nearby. We are that serious about supporting your practice.

A product portfolio second to none.

We also take a tough stand on product development. There's a lot more than billing going on in a doctor's office. So we create programs that will make life easier in many ways. With accounts receivable programs like MedSTAR™, DentSTAR™ and CHIRO™. Plus MAPS™– appointment scheduling, REQUESTOR™– referral tracking, BKeeper– accounts payable, EMC– electronic media claims and much, much more.

We write these programs ourselves. And we service the hardware ourselves. And that's how we keep you up and running, as no other company can.

Find out why so many colleagues have chosen H I S.

We replace a lot of less capable computer systems. Almost daily. Yet for the past five years, not one H I S system has been replaced. Why? Because our customers know they have the absolute best in products and service. You owe it to yourself to see what makes them think that way.

Contact your nearest H I S Regional Center by calling toll-free 1-800-562-7069. In Connecticut, (203) 953-8909. We would be happy to send you more information.

HIS

Health Information Systems, Inc.

Tomorrow's Solutions in Today's Practice

MedSTAR, DentSTAR, CHIRO, MAPS, REQUESTOR, and BKeeper are trademarks of H I S.

RHODE ISLAND MEDICAL JOURNAL

THE FRANCIS A. COUNTWAY
LIBRARY OF MEDICINE
BOSTON, MA
MAY 30 1991

EDITORIAL STAFF

Stanley M. Aronson, MD
Editor-in-Chief

Kimberly J. Allyn
Managing Editor

Seebert J. Goldowsky, MD
Editor-in-Chief Emeritus

EDITORIAL BOARD

*Edward R. Feller, MD
Chairman

*Joseph Amaral, MD
*Stanley M. Aronson, MD
Edward M. Belser, PhD, JD
Paul Calabresi, MD
*Richard A. Carleton, MD
Margaret Cololan, MSJ
*James P. Crowley, MD
*Peter A. Hollmann, MD
*Frank J. Schaberg, Jr., MD
*Fred J. Schiffman, MD
William J. Waters, Jr., PhD

*Member of Publications Committee

OFFICERS

Richard Wong, MD
President

Kathleen C. Hittner, MD
President-Elect

Gillian M. Newstead, MD
Secretary

Frances P. Conklin, MD
Treasurer

Donald R. Coustan, MD
Immediate Past President

DISTRICT AND COUNTY PRESIDENTS

Roger D. Raymond, MD
Bristol County Medical Society

William F. Coscina, MD
Kent County Medical Society

Orest Zaklynsky, MD
Newport County Medical Society

Frank J. Schaberg, Jr., MD
Pawtucket Medical Association

James P. Crowley, MD
Providence Medical Association

Joseph R. Dotolo, MD
Washington County Medical Society

Patrick R. Levesque, MD
Woonsocket District Medical Society

Volume 74, Number 5 May 1991

TABLE OF CONTENTS

EDITORIALS

201 Elective Surgery in Older Persons

The Language of Clinical Epidemiology (I)

CONTRIBUTIONS – *Guest Editor, Frank J. Schaberg, Jr, MD*

205 **Surgery in the Elderly**
Frank J. Schaberg, Jr, MD

211 **The Post-Operative Care of the Older Patient: The Geriatric and Rehabilitation Perspective**
John B. Murphy, MD

221 **Trauma Care for the Elderly?**
Pardon R. Kenney, MD
Eric J. DeMaria, MD
Donald S.Gann, MD

227 **The Ethical Responsibility of Surgeons in Conflicts With Patients or Their Surrogates About Treatment**
Dan W. Brock, PhD

COLUMNS

235 **HEALTH BY NUMBERS**
Hospitalizations for Surgery Among the Elderly

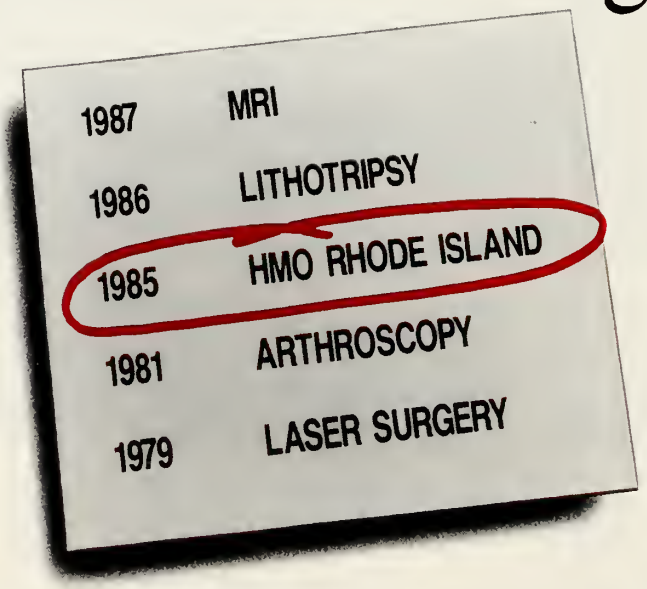
238 **CONTEMPORARY PROBLEMS IN MEDICINE**
Should Practicing Physicians be Routinely Tested for the AIDS Virus?

243 **THE RHODE ISLAND MEDICAL JOURNAL HERITAGE**

Cover: "Head of an Old Man", Tiepolo, Giovanni Battista, Italian, 1696-1770. Reprinted with permission from the Museum of Art, Rhode Island School of Design, Museum Works of Art Fund.

Rhode Island Medical Journal is owned and published monthly by the Rhode Island Medical Society, 106 Francis Street, Providence, Rhode Island 02903, Ph: 401/331-3207. Single copies $2.00 — Subscriptions $20.00 per year (members of the Rhode Island Medical Society — $5.00 annually). Published articles represent opinions of the authors and do not necessarily reflect the official policy of the Rhode Island Medical Society unless clearly specified. Advertisements do not imply sponsorship or endorsement by the Rhode Island Medical Society. Second class postage paid at Providence, Rhode Island. ISSN 0363-7913 POSTMASTER: Send address changes to RHODE ISLAND MEDICAL JOURNAL, 106 Francis Street, Providence, RI 02903. National Advertising Bureau: State Medical Journal Advertising Bureau, Inc., 711 South Blvd., Oak Park, Illinois 60302. Phone 708/383-8800.

Not all advances in the practice of medicine have been technological.



The Rhode Island healthcare industry takes a backseat to no one.

Open heart surgery was first performed in this state in 1958. Percutaneous translumenal coronary angioplasty in 1988. And the new radiology and oncology units have made Rhode Island a national center for cancer treatment.

But while all these advances have improved the quality of life for Rhode Island and its people, one advance made it better for physicians. HMO Rhode Island.

It's an organization that makes you part of the policy-making process. It's a health maintenance plan that puts emphasis on preventive care, and on you, the primary care physician. You provide the guidance for your patient in all healthcare decisions.

Fee schedules are competitive. Paperwork is minimal. Payment terms are available in either capitated or fee-for-service arrangements. And service is prompt and attentive.

So you see, innovation need not be limited to the operating room. Call Michael Gerhardt, President of HMO Rhode Island, at (401) 274-6674 for more information.

HMO RHODE ISLAND

The Ultimate Health Maintenance Organization.

EDITORIALS

Elective Surgery in Older Persons

The aging person is increasingly vulnerable to illnesses which often require surgical intervention; yet, perversely, aging itself measurably increases the risks of surgery. As the potential need for surgery expands, so too do its perils. Older medical texts refer gravely to the profound hazards of operating upon the elderly and caution against such recklessness. But in recent years, particularly with rational preoperative preparation and a conscious intent to minimize physiological stress, surgeons have become eminently successful in undertaking major procedures in the elderly, even the very elderly. To quote Schaberg, "surgeons have become comfortable with physiologic function rather than chronological age as a major determinant of a patient's ability to withstand surgical stress."

Determining whether or not to operate upon the elderly patient, therefore, shifts increasingly into the domain of ethical - rather than prognostic - decision-making. In this issue, Brock's scholarly review of surgeons' responsibilities with the elderly, often incompetent, patient vividly illustrates the multitude of current dilemmas which extend well beyond the soluble problems of electrolyte balance.

This month's issue of the *Rhode Island Medical Journal*, with Dr Frank J Schaberg, Jr as Guest Editor, devotes its contents largely to the problems and challenges of surgery in the elderly patient. The lead article provides some revealing data on current surgical practices and outcomes in the elderly. Schaberg summarizes the records of 125 consecutive patients, aged 75 years and older, undergoing major abdominal surgery at Memorial Hospital of Rhode Island. His instructive studies indicate, ". . . that in the functional elderly, elective surgery is both safe and effective."

How common then is major

AGE DISTRIBUTION OF PATIENTS UNDERGOING SURGERY, 1990

AGE	MALES		FEMALES	
	minor	major	minor	major
<45	29	19	49	22
46-55	19	8	19	7
56-65	25	19	20	13
66-75	31	19	24	25
76-85	17	14	20	11
86+	4	1	6	4
TOTAL	125	80	138	82
AVERAGE AGE	56.5	59.0	53.7	57.2

surgery of the elderly in today's modern general hospital? In the total context of operating room activity, is it rare or common? To answer this statistical question, we approached a well-known, established general surgeon in the greater Providence region and obtained his permission to review his operative records for the calendar year 1990. During this interval he performed 162 major operations and 263 minor operations. The age distribution of these 425 patients appears on the previous page.

Note that 74 of the 162 major procedures (45.7%) and 102 of the 263 minor procedures (38.8%) were performed on persons who were 65 years of age or older. Indeed, 30 of the 162 major operations were in individuals 75 years of age or older. Of these 30, 12 had bowel resections and eight others underwent laparotomy for gall bladder or uterine disease. An 85-year-old being wheeled into an operating room is no longer a rare event.

In Schaberg's experience, elective major surgery beyond the age of 75 years carries an operative mortality of less than 3%. The enhanced vulnerability of the aged, of course, has not diminished (Schaberg observes that emergency - in contrast to elective - abdominal surgery still carries a mortality rate as high as 40%). What has changed over the years, obviously, is the due recognition of the importance of nutritional factors, fluid balance and meticulous attention to perioperative preparation which characterizes today's surgical approach toward the elderly. Murphy's article on post-operative care and rehabilitation of the older patient, in the current issue, emphasizes the compellingly critical importance of pre-operative assessment and post-operative care in reducing the hazards of surgery in such patients.

In modern man, even modern physician, there linger primordial, whispered fears from past ages. Somehow the dark notion persists that the frail, fragile elderly are unique persons who have experienced much travail in their long lives and do not now deserve the "suffering" which surgery might confer. Somehow they are thought to be akin to revered parents - not to be subjected to demeaning familiarity or violated by presumptuous surgery. The elderly assuredly deserve reverence; and needless surgery at any age is an affront to medicine. But is it truly an act of reverence to see Grandma die of a perforated, purulent gall bladder that might have been safely resected?

Stanley M. Aronson, MD

The Language of Epidemiology (I)

Whether it be the content of medical journals or hem-lines, change is surely one of the few certainties in life.

Both in style and focus, our clinical periodicals continue to show dramatic change. Three or four decades ago, they had been substantially fewer in number, less likely to explore the ethical or economic dimensions of human illness, and characteristically descriptive and anecdotal rather than analytic.

It is an instructive exercise to reread 50-year-old issues of the leading American medical journals. Reviewing them assures us that we have made substantial progress in broadening our technical abilities to prevent, lessen or even cure many diseases of presenescence. But there is yet another, perhaps more significant, aspect of journal content where notable progress has been achieved. The typical articles of the 1990s tend to adopt more stringent criteria before granting the notion of success or failure. Most scientific articles today are awash in quantitative terms; and words such as *significance, sensitivity, specificity* and *predictive value* are used with precision, adhering strictly to commonly held definitions. Virtually every new contribution to a publication such as the *New England Journal of Medicine* is now essentially an article in clinical epidemiology. In each article an hypothesis is advanced, a domain of human subjects carefully established, an intervention (such as a specific treatment) described, technical methods are outlined, and outcome measures are rigorously defined. The results are then presented in sparse, non-judgmental text, statistical tests are applied and, within a specified framework, contingent conclusions are reached. Articles such as these - indeed, the bulk of contributions to our major, refereed journals - are not designed for leisurely reading or as persuasive essays. Their lean, special language employs an economy of words and seeks to convince by the weight of numeric testing rather than by the luster of eloquent prose.

This newer language, the language of clinical epidemiology, must be understood before a current author's evolution of thinking, interventional mechanics and conclusions can

be critically appreciated. From time to time, then, the *Rhode Island Medical Journal* will provide brief essays on the derivation of some of the component terms of this new language.

To illustrate the narrow epidemiologic meaning of the words *specificity*, *sensitivity* and *predictive value*, let us assume the following: A disease exists, we will call it XY disease, which is clinically obvious only in its terminal stages but indistinguishable from other diseases during its acute phase. In order to prevent XY disease from inflicting its full damage, then, it becomes important to find an objective screening test (laboratory, radiologic or electrophysiologic) which can tell us during the acute phase, with reasonable certainty, whether or not our patient truly has XY disease.

A new, as yet unproven, test is now devised and applied to, let us say, 100 persons in a high-risk group for XY disease and who already display early, but nonspecific, clinical signs which may (or may not) presage XY disease. This new test, using previously established, objective criteria, is positive in 24 patients and negative in the remaining 76.

These 100 patients are followed prospectively for some designated interval of time and eventually 30 of the 100 patients in this cohort show the unequivocal signs of XY disease. What may we conclude from this?

To answer this new question, we must first recognize that each of our 100 patients is assignable to one, and only one, of four categories:

1. Those with a positive test, ultimately developing XY disease (cell a).

2. Those with a positive test who do not develop XY disease (cell b).

3. Those with a negative test, ultimately developing XY disease (cell c).

4. Those with a negative test who do not develop XY disease (cell d).

The relationships of these four mutually exclusive categories (cells) can be better visualized if we distribute the 100 patients into the four cells comprising the following table:

	WILL DEVELOP XY DISEASE		
	yes	no	totals
TEST RESULT positive	a (21)	b (3)	a + b (24)
TEST RESULT negative	c (9)	d (67)	c + d (76)
totals	a + c (30)	b + d (70)	a + b + c + d (100)

1. Note, in cell b, that 3 (of the 24 who tested positively) never developed XY disease. We call these *false positives*.
2. Note too, in cell c, that 9 (of the 76 with a negative test) nevertheless went on to develop XY disease. We call these *false negatives*.
3. We define *sensitivity* as the degree to which the test has identified those truly destined to show XY disease. Algebraically, it is expressed as (a)/(a+c) x100 = 21/30 x 100 = 70% *sensitivity*. Thus, with this population and this screening test, 70% of those who yield a positive test will in reality have XY disease. If there had been no *false negatives* (cell c) then the *sensitivity* would equal 100%.
4. We define *specificity*, on the other hand, as the degree to which the test was negative for those truly free of XY disease. Algebraically, it is expressed as (d)/(b+d) x 100 = 67/70 x 100 = 95.7% *specificity*. Thus, with this population and test, 95.7% free of XY disease yielded a negative test. If there had been no *false positives* (cell b), then *specificity* would equal 100%.
5. Finally, (a)/(a+b) x 100, the percent of those who tested positively (cells a+b) and who were indeed destined to develop overt XY disease (cell a) signifies the predictive value of the test under trial. In this instance, 21/24 x 100 = 87.5%.

• • • • • • • • • • •

This discussion will be continued in a future issue of the *Journal*.

Stanley M. Aronson, MD

RIMS INSURANCE BROKERAGE CORPORATION

- *A wholly-owned for-profit subsidiary of the Rhode Island Medical Society.*

- *Staffed by a fully licensed, professionally trained, uniquely qualifed manager who has twelve years experience in medical liability underwriting in Rhode Island.*

- *Specializing in quality service to Rhode Island physicians, dentists and all other health professionals who are insured for professional liability with the Rhode Island JUA.*

Make the RIMS-IBC
your agent of record
for your JUA medical liability insurance

Call today for details
(401) 272-1050

INSURANCE PROFESSIONALS
SERVING
HEALTH CARE PROFESSIONALS

RIMS INSURANCE BROKERAGE CORPORATION

Surgery in the Elderly

Frank J. Schaberg, Jr, MD

> ***"Cast me not off in the time of old age; forsake me not when my strength faileth."***
>
> ***–Psalm 71***

Introduction

The choice of surgery in the treatment of elderly patients is often a difficult one for physicians, patients and their families. Although most surgeons can recall the occasional indestructible nonagenarian who tolerated a major elective procedure as if it were a manicure, physicians are more familiar with major surgical illness and operation uncovering the underlying frailty of even the apparently sturdy elderly.

Recognizing the inherent risks of major surgery, there has been an increasing body of literature both medical, ethical and in the lay press questioning the value of surgery in the treatment of certain illnesses in the elderly.[1,2] The traditional surgical Mount Everest* theory has been repeatedly challenged and rejected. Surgeons are becoming increasingly sensitive to the important issues of individual patient's rights to choose therapy which is most consistent with their own goals and values even when it is, at times, what physicians may consider to be less than optimal. We are often faced with trying to help patients choose the best form of treatment within the context of their overall individual needs.

Much of currently available information on the risks and benefits of various surgical procedures has been gathered from studies of large groups of patients over a broad age range and does not specifically address the likely outcome in the elderly. Many studies are sufficiently remote to fail to account for currently available pharmacologic and technological support that has had a significant impact in reducing perioperative morbidity and mortality.

The more recent age-specific studies have generally concentrated on a specific illness or procedure.[3-6] To help understand the outcome of common surgical illnesses treated with operation we have reviewed our recent experience with patients 75 years of age or older undergoing major abdominal surgery. We have sought to evaluate the outcome as judged not only by morbidity and mortality but by significant change in functional ability to identify risk factors, and to evaluate the use of perioperative prophylactic measures currently believed to be effective in preventing perioperative complications.

Materials and Methods

The records of 125 consecutive patients age 75 years and

Dr Schaberg is Surgeon-in-Chief, Memorial Hospital of Rhode Island, and Associate Clinical Professor of Surgery at Boston University.

**The reason to tackle any obstacle is its presence.*

ABBREVIATIONS USED:
ASA: American Society of Anesthesiologists
DVT: deep venous thrombosis

over undergoing major abdominal surgery were reviewed. Vascular, urologic, gynecologic and breast surgery were excluded. Analysis of demographic data, severity of associated illnesses as measured by the American Society of Anesthesiologists' Classification, the urgency of surgery, perioperative pharmacologic and hemodynamic preparation and monitoring, and the use of perioperative prophylaxis for deep venous thrombosis and gastric hypersecretion was conducted. Complications resulting in prolonged hospitalization and/or the need for postoperative care were identified. The mortality of specific operations and surgical illness was analyzed. The effect of surgical illness on each patient's functional status as judged by the need for additional home assistance after hospitalization, or the loss of independence as judged by the need for nursing home placement was assessed.

Table 1. PROCEDURES

	Number	Average Age	Range
Elective Colectomy	**21**	**80.75**	**75-91**
Abdomino-Perineal Resection	**12**	**82**	**75-95**
Urgent Colectomy	**9**	**80.1**	**75-87**
Hartmann	**5**	**82.4**	**77-86**
Hartmann Closure	**5**	**76.5**	**75-79**
Biliary	**25**	**82.4**	**76-97**
Hernia (Urgent)	**14**	**81.4**	**75-88**
Gastrectomy	**13**	**80**	**75-86**
Small Bowel Obstruction	**10**	**83.2**	**77-97**
Appendectomy	**4**	**81.4**	**75-83**

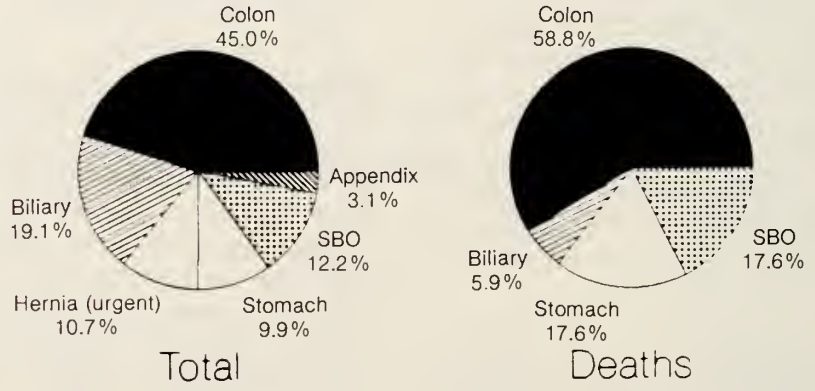
Results

One hundred twenty-five records were reviewed. There were 90 females and 35 males with a mean age of 83.2 years. The distribution of the surgical procedures is displayed in Table 1. Colonic surgery accounted for 45% of the procedures in our population. Postoperative mortality was highest for colonic surgery (Figure 1). The striking factor contributing to death following colonic surgery was the need for urgent or emergent surgery precluding the usual perioperative patient preparation. Of the 22 urgent colectomies, there were 9 deaths (40.9%). Of the 37 elective colon resections there was 1 death (2.7%) (Table 2).

Biliary surgery, often reported in the past to be the most common on operations in the elderly, accounted for 19%, less than one-half of the colonic operations. There were no deaths among biliary procedures for benign disease, and only 1 death overall (4%). This is in contrast to reported perioperative mortality of anywhere from 12 to 20% in elderly patients undergoing biliary surgery. The marked improvement in results is directly attributed to early aggressive antibiotic treatment, cardiovascular monitoring and support, and early definitive surgery.

Acute small bowel obstruc-

Figure 1. Abdominal Surgery in the Elderly



tion not related to incisional or inguinal hernia, accounted for 12% of laparotomies but 17.6% of deaths. The patients who succumbed to their illness uniformly presented with significant volume depletion requiring rapid, aggressive rehydration and hemodynamic monitoring for stabilization prior to surgery. They showed early signs of systemic sepsis even in the absence of gross perforation of the intestine or frank peritonitis. The predominant cause of death was sepsis and multisystem organ failure.

The records of 125 consecutive patients age 75 years and over undergoing major abdominal surgery were reviewed.

Gastric surgery in our elderly population was undertaken for bleeding. The effects of anemia and hemodynamic instability from hemorrhage resulted in 3 deaths in 13 patients (23%). There were no elective gastrectomies in the study population.

Hernia surgery for incarceration not requiring intestinal resection, whether incisional or inguinal, resulted in no mortality and minimum morbidity. These patients presented with sufficient time for preoperative hydration and perioperative monitoring. None had signs of advanced compromise of the intestine and there were no significant infectious complications.

Multisystem organ failure from sepsis was the leading cause of death in our patients (Table 3). This complication was directly correlated with the nature of the surgical illness for which the operation was carried out but not with the type of operation per se. Patients in whom the gastrointestinal tract was compromised by obstruction or perforation requiring urgent procedure without the opportunity for preparation of the bowel and antibiotic prophylaxis were at high risk for systemic sepsis and death.

Table 2. Mortality: Elective vs Emergency Surgery in Elderly

	Overall	Average Age (Yrs)	Elective	Emergency
Colectomy	10/59 - 16.9%	85.2	1/37 - 2.7%	9/22-40.9%
Biliary Surgery	1/25-4%	82	0	4%
Small Bowel Obstruction	3/16 - 18.75%	88	–	18.75%
Gastrectomy	3/13 - 23.1%	80	–	23.1%
Herniorrhaphy (Urgent)	0	81.4	0	0
Appendectomy	0	81.4	0	0

Pulmonary embolism and upper gastrointestinal hemorrhage were the next most common causes of death. This is of particular interest since there has been a great deal of surgical literature on the prevention of these complications through perioperative prophylaxis. In our patients, all of whom were high risk on the basis of age and type of illness, only 26% had

Table 3. Cause of Postoperative Death in Elderly Patients

Sepsis	5/17	29.4%
Pulmonary Embolus	4/17	23.5%
Upper Gastrointestinal Bleeding	3/17	17.6%
Acute Myocardial Infarction	3/17	17.6%
Metastatic Carcinoma	1/17	5.8%
Aorto-esophageal Fistula	1/17	5.8%
Overall Mortality	17/125	13.6%

adequate DVT prophylaxis begun at the time of admission and carried out rigorously through their illness. Twenty-five percent had prophylaxis for gastric hypersecretion begun at admission and carried out through their illness. Of the 17 deaths, 4 (23.5%) were from pulmonary embolism, and 3 (17.6%) were from massive upper gastrointestinal hemorrhage.

Multisystem organ failure from sepsis was the leading cause of death in our patients.

Acute myocardial infarction accounted for 3 deaths (17.6%). The severity of cardiac disease as judged by the ASA classification did not predict this complication. There was no difference between the percent of patients with advanced cardiac disease in the survival group as opposed to those who died.

All patients with any significant history of cardiac disease or cardiac symptoms at the time of admission had cardiologic consultation, careful attention to perioperative hemodynamic monitoring and appropriate pharmacological support.

Postoperative complications among the surviving patients are reported in Table 4. Among these patients there were the expected local wound problems and atelectasis common to all ages. It is of interest that the 3 pneumothoraces were all related to line placement, and that the incidence of pneumothorax following line placement was significantly higher in our elderly patients than in our younger population. It is also significant that there was one recognized deep venous thrombosis and a non-fatal pulmonary embolism in the surviving patients, neither of whom had prophylactic therapy.

Disposition after recovery from acute surgical illness was of particular interest. Eleven of our patients were admitted to the hospital from a nursing home and all of these returned to a nursing home. Five patients admitted from home developed significant functional disabilities as a result of their surgical illness and its treatment, which precluded returning to their previous independent living. Although a relatively small overall percent, this loss of independence was a major blow to the patients, their families and to society. The availability of modern home care services enabled 14 patients who otherwise would have required at least temporary nursing home placement or prolonged hospitalization, to return home and ultimately regain their independence.

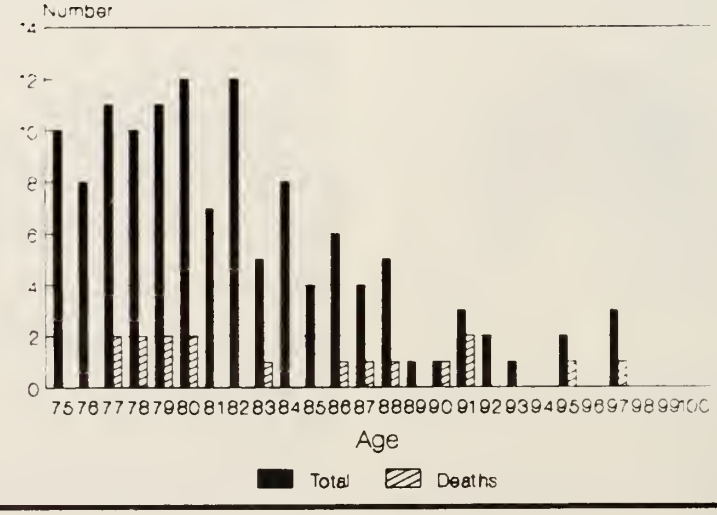
Table 4. Complications in Survivors

Wound Infection	**7**
Urinary Tract Infection	**7**
Pneumonia/Atelectasis	**4**
Pneumothorax (Line)	**3**
Reintubation	**2**
Deep Vein Thrombosis	**1**
Pulmonary Embolus (Nonfatal)	**1**
Peritonitis	**1**
Duodenal Fistula	**1**
Coagulopathy	**1**

Discussion

It is generally agreed that age per se should not be used as a criterion to withhold effective medical treatment. Realizing however, that all biological organisms have a finite life span, a clear understanding of the natural history of surgical illness and the inherent risks of surgical therapy is critical in choosing the best treatment or the older patient. Surgeons have become

Figure 2. Deaths After Intra-Abdominal Surgery



comfortable with physiologic function rather than chronological age as a major determinant of a patient's ability to withstand surgical stress. This assessment of physiological function combined with knowledge of patient's expectations and goals is the major consideration in choosing surgical therapy, even for the advanced elderly. There is no definable age after which surgery cannot be safely undertaken (Figure 2).

Surgeons have become comfortable with physiologic function rather than chronological age as a major determinant of a patients' ability to withstand surgical stress.

Understanding the likelihood of success following surgery, especially when measured from the patient's perspective, is of great importance in choosing appropriate therapy. There are many procedures for which a technical success as measured by survival or eradication of disease could be a total failure from the patient's point of view because of a resultant functional disability, particularly if it meant loss of independence or loss of ability to care for a spouse or child.

The elderly overall have more "urgent" operations for diseases than do younger populations. This is partially the result of the patients themselves attributing signs or symptoms to natural aging, or to their reluctance to pursue symptoms for fear of their ultimate diagnosis. It is also, however, a function of the attitude of many physicians who have a low index of suspicion in the elderly, and are more likely to employ symptomatic treatment for signs and symptoms that they would evaluate more aggressively in young patients. The dramatic worsening of outcome after urgent or emergent surgery suggested in many recent studies, has been borne out in our work.

The magnitude or complexity of surgical operation per se is less significant than the magnitude of illness for which the surgery is undertaken, particularly with the presence of sepsis at the time of surgery. Emergency surgery is clearly related to decreased survival overall. Significant intraabdominal infection is strongly correlated with the development of multisystem organ failure, the need for secondary operations, and a protracted course with intensive supportive therapy prior to demise. The inability of the elderly to respond to and cope with infection is the most common cause of death.[10]

The choice of elective surgical therapy in the elderly is of particular importance. [11,12] Our study clearly indicates that in the functional elderly elective surgery is both safe and effective. These patients not only have good technical results, but maintain their independence and "quality of life." In our patients, there was less than 3% mortality for elective major surgery. Emergency surgery can increase the mortality to as high as 40% in colonic operations. Thorough preoperative evaluation, preoperative preparation and prophylaxis for infection, deep venous thrombosis and gastric hyperacidity significantly lower perioperative morbidity and mortality.

Careful assessment of symptoms and attention to health screening should continue into old age to minimize the number of emergency procedures in the elderly. It is erroneous to assume that patients or their families do not wish to be aware of significant potentially curable illness, or that they would choose not to undergo treatment if they were aware of the potential for significant benefit because the treatment was surgical. When faced with urgent surgical problems in the elderly in spite of the high morbidity and mortality, we are often balancing a situation where a lack of treatment carries a virtual certainty of death. The judgment to proceed with therapy needs to be tempered with a realistic assessment not only of survival as a goal of treatment, but patient comfort, functional ability and similar quality of life issues. It is a Pyrrhic victory to undertake a major surgical procedure in any patient which results in survival but with a total loss of independent function. Elderly patients would almost never choose to undergo therapy that was likely to result in their loss of independent function and the ability to communicate, even if the alternative is death.

Our study clearly indicates that in the functional elderly elective surgery is both safe and effective.

References

1 Lewis AAM, Khoury GA: Resection for colorectal cancer in the very old: are the risks too high? *British Medical Journal* 1988; 296:459-461.

2 Hosking MP,, Warner MA, Lobdell CM, Offord KP, Melton J III: Out-

comes of surgery in patients 90 years of age and older. *JAMA* 1989; 261:1909-1915.

[3] Greenburg AG, Saik RP, Pridham D: Influence of age on mortality of colon surgery. *The American Journal of Surgery* 1985; 150:65-69

[4] Morel PH, Egeli RA, Wachtl S, Rochner A: Results of operative treatment of gastrointestinal tract tumors in patients over 80 years of age. *Arch Surg* 1989 124:662-664

[5] Harness JK, Strodel WE, Talsma SE: Symptomatic biliary tract disease in the elderly patient. *The American Surgeon* 1986; 52:442-445

[6] Sandler RS, Maule WF, Baltus ME, Holland KL, Kendall JS: Biliary tract surgery in the elderly. *Journal of General Internal Medicine* 1987; 2:149-154.

[7] Waldron RP, Donovan IA, Drumm J, Mottram SN, Tedman S: Emergency presentation and mortality from colorectal cancer in the elderly. *Br J Surg* 1986; 73:214-216.

[8] Keller SM, Markovitz LJ, Wilder JR, Augses AH Jr.: Emergency and elective surgery in patients over age 70. *The American Surgeon* 1987; 53:636-640.

[9] Reiss R, Deutsch AA: Emergency abdominal procedures in patients above 70. *Journal of Gerontology* 1985; 40:154-158.

[10] Harbrecht PJ, Garrison RN, Fry DE: Role of infection in increased mortality associated with age in laparotomy *The American Surgeon* 1983; 49:173-178.

[11] Williams JH, Collin J: Surgical care of patients over eighty: a predictable crisis at hand. *Br J Surg* 1988; 75:371-373.

[12] Warner MA, Hosking MP, Lobdell CM, Offord KP, Melton J III: Surgical procedures among those - 90 years of age. *Ann Surg* 1988; 207:380-386.

[13] Evans M. Pollock AV: Major abdominal operations on patients aged 80 and over: an audit. *British Medical Journal* 1987; 295:1522.

YOUR SPECIALTY IS WORTH AN EXTRA $8,000 A YEAR.

If you're a resident in any of the following specialties:

- anesthesiology
- cardiac/thoracic surgery
- orthopedic surgery
- pediatric surgery
- general surgery
- peripheral/vascular surgery
- neurosurgery
- colon/rectal surgery
- plastic surgery

you could be eligible for an $8,000 annual stipend in the Army Reserve's Specialized Training Assistance Program.

You'll also be using your skills in a variety of challenging settings, from major medical centers to field hospitals, and there are opportunities for conferences and continuing education.

We know your time is valuable, so we'll be flexible about the time you serve. Your immediate commitment could be as little as two weeks a year, with a small added obligation later on. If you'd like to talk to an Army Reserve physician, or if you'd like more information about the stipend program or other medical opportunities, call our experienced Army Reserve Medical Counselor:

CPT John Grimes
203-624-5325
Call Collect

BE ALL YOU CAN BE.®
ARMY RESERVE

The Post-Operative Care of the Older Patient: The Geriatric and Rehabilitation Perspective

John B. Murphy, MD

. . . We are seeing dramatic increases in the number of operative procedures that are performed on older persons.

Introduction

In Rhode Island, as throughout the United States and other industrialized nations, the older population (age 65 and older) is growing rapidly. Correspondingly, we are seeing dramatic increases in the number of operative procedures that are performed on older persons. Older persons possess a number of unique characteristics which make them particularly susceptible to adverse outcomes from hospitalizations in general and from surgical procedures in particular. Many of these relate to specific physiologic characteristics and others are a result of the systems in which we care for older persons. This review will focus on the unique aspects of the postoperative geriatric and rehabilitative care necessary for an older patient population and will include issues that relate not only to the unique characteristics of older persons but also to the health systems in which we care for our older patients.

As noted, the population of the United States is rapidly growing older. In 1900, 4% of the US population was age 65 and older and by 1980 the figure had risen to 11.3%.[1] Estimates for 1990 are that 12.7% of the entire US population is over the age of 65 and that this figure will increase to 22% by the year 2040.[2] In 1900, 4.6% of the population of Rhode Island was age 65 years and older and by 1980 the figure had increased to 13.4%.[3] By the year 2040, 20% of Rhode Island's population will be 65 or older.[3] This puts Rhode Island in the number three position (behind Florida and Arkansas) in a rank order of states based on the percent of population 65 and older.[1] The population 85 and older is the fastest growing group of all and Rhode Island is first among states with the percentage of the population 85 and older.[1] This graying of America and particularly of Rhode Island translates into a large and growing number of operative procedures performed on older individuals. Between 1974 and 1983 the rate of operative procedures per one thousand persons in the population increased for those age 65

John B. Murphy, MD, is Chief of Gerontology at Memorial Hospital of Rhode Island and Assistant Professor, Department of Family Medicine and Director, Division of Gerontology, at Brown University, Providence, Rhode Island.

ABBREVIATIONS USED:

ADL: activities of daily living
CORF: Comprehensive Outpatient Rehabilitation Facilities
DRG: diagnostically related group
FA: functional assessment
HANES: Health and Nutrition Examination Survey
IADL: instrumental activities of daily living
OT: occupational therapy
PT: physiotherapy
SNF: skilled nursing facility

and over from 146 per thousand to 211 per thousand.[4] This is in contrast to stable or decreasing rates during the same time period for all other age groups.[4]

The importance of the increased frequency of surgery performed on older persons is heightened by numerous factors which influence surgical morbidity and mortality. Although morbidity and mortality rates associated with operations increase with age, this is in large part attributable to factors other than age alone.[5] Older persons are more likely to undergo procedures of greater magnitude than are younger age groups and they are also more likely to undergo emergency versus elective surgery.[4] The prevalence of co-morbid illness increases with age and this greater burden of disease contributes to higher surgical morbidity and mortality rates for older populations. In addition to high disease prevalence rates older persons commonly have multiple illnesses and physical impairments, diminished physiological and functional reserve, atypical presentations of disease and most importantly, cognitive-impairments (or an enhanced susceptibility to developing cognitive impairments). This constellation of characteristics makes meticulous perioperative care of the older surgical patient a necessity.

Although postoperative care begins in the preoperative period, preoperative care is addressed elsewhere in this issue of the *Rhode Island Medical Journal*. In this discussion the preoperative care will only be covered as it specifically relates to postoperative geriatric and rehabilitative care.

Functional Assessment

Good postoperative care truly begins in the preoperative period. Beyond the usual medical assessment which includes all major organ systems (particularly cardiovascular and pulmonary systems) a functional assessment (FA) is essential for optimal perioperative care of the older person. An FA for the older person should include at a minimum, an assessment of physical function, mobility, social functioning and cognitive functioning (Table 1). Without this assessment it is not possible to develop a rational postoperative care plan for the older person.

Appendix 1 is a copy of a geriatric screening form which I constructed and which I have found useful. It is constructed so that assessments can be performed at multiple points in time so as to follow the course of a patient's functional status. It is composed of the Katz Activities of Daily Living Scale, Lawton's Instrumental Activities of Daily Living, a mobility measure and the Folstein Mini-Mental State Exam.[6,7,8]

Physical function refers to the activities of daily living (ADL), the instrumental activities of daily living (IADL), and a measure of mobility (Table 1). The importance of the preoperative assessment of physical function relates to postoperative care in two ways. First, the assessment of physical function in the preoperative period may well identify limitations in activities which are not normal aspects of aging. Any limitation which is

Table 1 **Functional Assessment (FA)**

A. Physical Function

ADL -	Bathing, dressing, toileting, transferring, feeding, competence (bowel and bladder)
IADL -	Shopping, transportation, meal preparation, laundry, light housework, medication use, and management of finances
Mobility-	Independent, assistive device, personal assistance, totally dependent

B. Cognitive Function

Mini Mental State Examination - Orientation, registration, attention/calculations, recall and language

C. Psychosocial Function

-Living arrangement - including social supports and physical environment,
- financial status,
- alcohol/drug use, (includes prescription and non-prescription drugs)
- mood/affect

identified should be investigated so,that the etiology can be identified. This is important because the limitation may result from an as yet undiagnosed or less than optimally managed disease. Preoperative interventions (when time allows) may not only translate into improved quality of care for the particular limitation and disease entity, but may also minimize intraoperative and postoperative risk which results from the untreated condition. In short, functional assessment is an excellent screen for unrecognized illness.

. . . Choosing an operative approach which allows for the earliest postoperative full weight-bearing may decrease postoperative morbidity and may justify the risks of a longer and more complicated intraoperative procedure.

The second reason to assess physical function in the preoperative patient is that it relates directly to the establishment of intra- and postoperative care plans. One example is the patient with the fractured hip. If an older person prior to fracturing his hip is able to ambulate only with the assistance of a walker because of underlying optimally treated Parkinson's disease and osteoarthritis, this may influence intraoperative and postoperative care. Intraoperative care may be influenced by the importance of early postoperative ambulation in this patient. The Parkinson's disease will magnify the ill effects of any time spent at bed rest and the combination of the Parkinson's disease, osteoarthritis, and the preexisting gait impairment, make it very unlikely that the patient will truly be able to participate in any rehabilitation program in which he is expected to maintain only partial weight-bearing on the effected extremity. He will likely be too unsteady to just "toe touch" or otherwise limit weight-bearing and will have to remain in bed or a chair until he can full weight bear. A lengthy period of bed rest in this patient could lead to serious consequences. Thus, choosing an operative approach which allows for the earliest postoperative full weight-bearing may decrease postoperative morbidity and may justify the risks of a longer and more complicated intraoperative procedure. In this example a preoperative FA may influence the choice of intraoperative procedure and the timing of the postoperative rehabilitation program.

The prevalence of cognitive deficits increases dramatically with age, and because a preexisting cognitive deficit clearly puts the surgical patient at an increased risk for postoperative delirium some objective preoperative measure of cognitive function is essential. The Folstein Mini-Mental State Exam is one commonly used and widely accepted measure which has been standardized for older persons in the acute hospital.[9] The major dimensions of this exam are also delineated in Table 1.

The preoperative assessment of cognitive function for the older surgical patient bears directly on the postoperative care. As with physical function this is for two primary reasons. First, the cognitive deficits may relate to a reversible medical illness and treatment of the underlying conditions may significantly alter the surgical outcome. Second, the nature and extent of the cognitive deficit directly affects postoperative management decisions. The older individual with a significant cognitive deficit is much more likely to develop postoperative delirium than is an individual with normal cognitive function.[10] Thus, the choice of medications, the level of surveillance for fluid and electrolyte abnormalities, the management of pain, and even the choice of the site for an elective operation may be affected by the presence of a cognitive deficit. Medication use and pain management in particular must also be modified in relation to the patient's cognitive abilities. Many drugs have central nervous system side effects and if at all possible these should be avoided or minimized for the person with a preexisting cognitive impairment.

The older individual with a significant cognitive deficit is much more likely to develop postoperative delirium than is an individual with normal cognitive function.

The range of data to be included in a psychosocial assessment is broad and the specific key elements to be gathered are less well defined than for physical and cognitive function. However, important areas include the preoperative and planned postoperative living arrangements, social and financial supports, mood and affect, the use of alcohol and other drugs. The importance of these issues to postoperative planning and management should be

relatively clear. Alcohol dependence is as common in older patient populations as it is in younger groups and constitutes a major risk for postoperative complications related to withdrawal. For the older person the home environment and social as well as financial supports directly impact on postoperative planning. Whereas a younger individual is frequently able to be discharged to home with little or no support services, the older person with limited supports, as well as limited physical and cognitive function , may not be a candidate for independent home discharge. When this is the case the discharge planning optimally should begin in the preoperative period.

Postoperative Geriatric Issues

In the postoperative period there are a number of issues of unique importance to the older patient, regardless of the operative procedure. The most important of these are addressed below.

According to the Health and Nutrition Examination Survey (HANES) up to 16% of Americans over the age of 65 ingest fewer than 1,000 calories per day.

Older persons are less well nourished in general than are younger patients. According to the Health and Nutrition Examination Survey (HANES) up to 16% of Americans over the age of 65 ingest fewer than 1,000 calories a day.[11] For older persons in acute care hospitals up to 65% suffer from malnutrition.[12] In healthy elderly persons total serum albumen levels are maintained in the normal range but minor degrees of illness can depress serum levels of albumen.[13] Aging is also associated with a reduction in lean body mass as well as reductions in protein intake and in whole body protein synthesis.[14] Given a high prevalence of malnutrition and an increased susceptibility to develop malnutrition, older persons are at increased risk of nutrition-related postoperative problems. Preoperative and postoperative intervention to supplement or maintain alimentation in this group is probably more important than in any other age group. Older individuals have a very limited reserve and even a few days receiving only fluids, electrolytes, and dextrose will put the older person at markedly increased risk. One to two days wait for the gut to regain function may be sufficient time to begin a cascade of negative occurrences which will result in devastating consequences. If the older person is malnourished or marginally nourished a few days with minimal protein and calorie intake may well have effects on immune function, the likelihood of subsequent infection, wound healing, the development of decubitus ulcers, and loss of strength sufficient to make transfers or ambulation no longer realistic goals.

A full description of enteral/parenteral alimentation in the older hospitalized patient is beyond the scope of this paper and excellent reviews are found elsewhere.[15] In many settings enteral and parenteral alimentaties are appropriately dealt with by a team of health care professionals including physicians, nurses, nutritionists and others. Regardless of who is involved the key with nutrition is to intervene early and at times this may well mean in the preoperative period.

Among patients confined to bed or chair for a week in the acute hospital setting, the prevalence of decubitus ulcers is as high as 28%.

It has been almost 50 years since Rusk conclusively demonstrated the benefits of early ambulation in the postoperative period.[16] Unfortunately, since then immobility, deconditioning and functional decline in hospitalized elders have been reported by numerous authors.[17-20] For the older person, much more so than the younger individual, early postoperative mobilization is critical. Immobility in the hospitalized individual has been documented to be associated with decubitus ulcers, deconditioning, contractures, numerous infections, depression, constipation, deep vein thrombosis, pulmonary embolus and malnutrition. Often health care professionals worry about ambulating hospitalized elders because of the risk of falls. However, in a program with appropriate supervision of early ambulation (except when truly medically contraindicated) the risk of a serious fall is significantly less than are the risks of immobilization. Furthermore, if it is necessary to immobilize a single extremity there is no reason that the other three extremities should not receive range of motion and strengthening exercises. As with nutrition, the more frail the individual the

shorter the period of immobility that the patient can tolerate.

Decubitus ulcers are exceptionally common among hospitalized elderly patients. Among patients confined to bed or chair for a week in the acute hospital setting the prevalence of decubitus ulcers is as high as 28%.[21] Sixty percent of all patients with decubitus ulcers develop those ulcers in the hospital and aside from younger spinal cord injury patients the vast majority of pressure ulcers occur in persons over age 60.[22] Full discussion of the pathogenesis and treatment of pressure ulcers are beyond the scope of this paper. However, it is clear that the most effective treatment for the decubitus ulcer is prevention, and the most important preventive measure is early mobilization of the patient. For those patients who for whatever medical reason absolutely cannot be mobilized repositioning on an every two hour basis, antipressure devices such as eggcrate mattresses, sheepskins, and the more sophisticated air fluidized beds have all been found to be effective. The more expensive and sophisticated devices are not necessary in the vast majority of cases for prevention. Additional preventive strategies include attention to adequate nutrition, shearing forces, moisture, and friction over bony prominences. Close surveillance to look for nonblanching erythema over bony prominences (the first sign of a grade I decubitus) is also essential in the postoperative period. At this first sign of impending skin breakdown preventive measures should be intensive (eg, move to air fluidized beds) and initial treatment should begin.

Dementia and delirium are common entities in older patient populations. In fact, in a study in east Boston almost 50% of the oldest group of community dwelling elders suffered from a dementia.[23] In work by McCartney *et al* 79% of cognitive deficits were missed by the examining physicians in a cohort of 165 elderly patients admitted to the medical and surgical wards of an acute care hospital.[10] In this study, the presence of a cognitive deficit on admission was predictive of intra-hospital acute episodes of confusion. Thus, for the older person, preoperative assessment of cognitive function can help identify those individuals who are at greatest susceptibility for postoperative confusion. Once identified, a number of strategies can be utilized to minimize the likelihood and severity of postoperative delirium. These include minimization of any medications which will affect central nervous system function, meticulous management of fluids and electrolytes (a small degree of hyponatremia in a cognitively impaired individual may dramatically affect cognitive function), careful monitoring of cardiac and respiratory function, and strategies to minimize disturbances in the patient's usual daily routine. Successful strategies include performing an operation in an outpatient setting (whenever possible), having family members present in the recovery room, and participating in postoperative nursing care, returning the patient to the same floor and same room postoperatively preferably with the same nursing staff, and minimizing sensory deficits (eg, appropriate use of glasses and hearing aids).

In addition to anticipating delirium in the person with a preexisting cognitive deficit, it is also important to respond to delirium in the postoperative period with a thorough evaluation. Delirium should not be routinely ascribed to the patient's age or preexisting cognitive deficit. Sepsis, fluid and electrolyte disturbances, hypoxia, pulmonary emboli, cerebrovascular accidents and numerous other medical complications may present with delirium in the postoperative period. Failure to recognize such complications early can obviously lead to disastrous complications.

. . . A small degree of hyponatremia in a cognitively impaired individual may dramatically affect cognitive function . .

Older individuals are particularly susceptible to the adverse effects of medications. Numerous physiological aspects of aging (eg, diminished renal function, decreased lean body mass, altered hepatic metabolism, etc.) contribute to this increased risk. Additional factors include the high prevalence of concomitant use of other medication and the presence of multiple illnesses. In the postoperative patient many of these risks are exaggerated. For example, drug metabolism may be significantly altered by bed rest, anesthetic medications, alterations in renal or hepatic metabolism related to surgery and the use of analgesics.

Key principles to follow in the postoperative period include using the lowest possible dose

and the fewest number of medications possible. As best as possible avoid drugs which can have central nervous system effects. Frequently, after the immediate postoperative period, acetaminophen prescribed every four hours is sufficient to deal with the postoperative pain of the older person. Narcotics play an important role in the management of severe pain, but have a number of risks including alterations in nervous system function leading to delirium, constipation, immobility, respiratory depression, and numerous other problems. Ketorolac, a new parenteral nonsteroidal inflammatory agent holds significant promise for postoperative pain management in the older patient population because it has minimal neural side effects.[24]

Another major drug group which poses a significant hazard of the older patient in the acute hospital is the benzodiazepine group. These medications are frequently used as hypnotics and anxiolytics. Unfortunately, they have been associated with a high risk of nervous system side effects and accidents, particularly falls leading to fractures.[25] A number of physiological aspects of aging result in altered metabolism of these drugs in older persons and put older persons at increased risk. As such, benzodiazepine should be used with extreme caution in older hospitalized persons. The risk associated with a bad night's sleep is far less than that associated with the routine use of these drugs in hospitalized elders. For the physician it takes a great deal of resolve and a significant amount of time in patient education to avoid the use of these medications; however these efforts will pay off in decreased complication rates.

Postoperative Rehabilitation

In the 1940s Rusk firmly established the importance of postoperative rehabilitation.[16] His initial work dealt primarily with military personnel, who at the time, constituted the largest segment of persons in need of rehabilitative care. Today the focus of need for rehabilitative care has shifted as the demographics in the United States have changed. The graying of America has resulted in a large population of older individuals with chronic medical illnesses. These medical illnesses translate into limitations in functional ability and the need for restorative care. These needs are increased in the postoperative period because of the relative frailty of many elders and the nature of the conditions for which they undergo operative procedures. The frail but independently ambulating 80-year-old who undergoes an appendectomy may well need rehabilitative care in order to walk or transfer postoperatively, and even the most robust older person who fractures a hip will require postoperative rehabilitation care.

The nature and extent of rehabilitative care as well as the site for providing rehabilitation depends more on a patient's preoperative and postoperative functional status than any other variable. Meticulous attention to specific geriatric issues, as noted in the previous section, will minimize some patients' needs for rehabilitative care and maximize the outcome for those who do have need for rehabilitation.

Rehabilitation refers to a broad spectrum of activities which are provided in a variety of settings. Planning related to the level of rehabilitative care which a patient will need is based on a full medical and functional assessment of the patient and should begin early, preferably in the preoperative period. Depending on a patients' needs, rehabilitative care may be as simple as early postoperative ambulation with the assistance of a family member and as complex as the care provided by a large interdisciplinary team on an acute hospital inpatient rehabilitation unit. The choice of level is also based on the presence of existing resources.

Although it is difficult to generalize to individual cases, the knowledge of the general principles regarding which level of care is most appropriate for a given class of patient can help the surgeon in planning this important aspect of perioperative care. Consultation with a rehabilitation specialist, usually a physiatrist (a physical medicine and rehabilitation trained physician in the preoperative or early postoperative period should be considered in any case when the surgeon feels that postoperative rehabilitation may be needed. The functional assessment will prove particularly helpful to the surgeon in making this decision. Any patient who has diminished functional ability (limitations in ADLs or IADLs) and particularly those individuals who have multiple limitations, are likely to be rehabilitation candidates. The importance of early rehabilitative intervention (perhaps even preoperatively) cannot be overemphasized. The physiatrist (or other rehabilitation professional) can assist the surgeon in

developing the most appropriate rehabilitative plan and in choosing the optimum setting for the delivery of care.

Outlined below is a description of the spectrum of setting in which rehabilitation is provided and a delineation of the principles guiding decisions related to choice of setting.

The older surgical patient who requires rehabilitative services will most frequently need these services for a relatively short period of time. In most cases physical therapy for gait training or occupational therapy to overcome limitations in ADLs will be provided while the patient is residing on the surgical floor and recovering from the operation. Most patients will not need a complex rehabilitation program and the individual therapies can be provided without interruption of the postoperative recovery phase and without consultation by a physiatrist. These services are covered by most reputable insurance carriers, but it should be noted that under prospective payment acute hospitals provide these rehabilitative services under the DRG reimbursement formula without additional charges. Many patients will not require post-discharge rehabilitation, but for those who do there is a full range of options.

Acute comprehensive inpatient rehabilitation is the most complex, comprehensive, and expensive level of rehabilitative care. Care at this level is provided in a DRG-exempt, inpatient unit or hospital which utilizes a comprehensive interdisciplinary team approach to care. The interdisciplinary team is composed of physicians trained in PM&R, primary care, and pertinent specialties (eg, geriatrics, rheumatology, neurology, and orthopedic surgery), psychologists and neuropsychologists, physical and occupational therapists, speech pathologists, social workers, nutritionists, discharge planners, pharmacologists, prosthetists, orthotists, and most importantly rehabilitation trained nurses. The vast majority of patients with rehabilitative or restorative needs do no need this intensive and costly level of care. Only those patients who are medically very complex and need daily medical monitoring and patients with a need for two or more rehabilitative services (eg, physical therapy and occupational therapy) would benefit from this type of a program. An additional pertinent issue which is germane to the older patient is that the level of intensity in acute comprehensive inpatient rehabilitation requires that a patient have sufficient stamina to sustain three hours a day of therapy. The patient need not be cognitive intact but must possess sufficient cognitive ability to learn from day to day. Furthermore, the patient must demonstrate progress or the potential for progress.

Throughout the country more than half of the patients who need this level of care are individuals who have suffered strokes. However, many surgical patients are also candidates. Examples include, the complicated hip fracture patient (not the patient who only needs training in ambulation), the surgical patient with a preexisting neurological or rheumatological problem who loses functional ability during the course of hospitalization, the patient who becomes deconditioned and the patient who suffers certain complications (eg, decubitus ulcer, traumatic nerve damage). The goals for patients admitted to comprehensive inpatient programs are individualized but in general focus on returning the patient to the highest level of functional ability in the shortest period of time. The best programs also endeavor to return patients to the least restrictive level of care as soon as possible. In general, the average length of stay on such units is 3-4 weeks and the costs vary widely.

Rehabilitative care provided in a skilled nursing facility is designed for the patient who needs only one rehabilitation service (eg, physical therapy), who needs daily skilled therapy (may include nursing), and who is not in need of daily physician monitoring. The more deconditioned older individual who does not have sufficient stamina to withstand the three hours per day of therapy provided to patients in acute hospital programs is also a candidate for a SNF program. The patient with an uncomplicated hip fracture or total hip replacement who lacks social support is a typical candidate for a SNF rehabilitation program. It should be noted, however, that program quality varies widely. As with inpatient rehabilitation most insurers cover a portion of SNF rehabilitation costs.

The patient who needs five days a week or more of skilled services (including nursing services) and who has a suitable home environment may be best cared for on a home care program. There are clearly benefits to receiving care in this less restrictive environment and the limitations relate primarily to the lack of 24-hour-a-day services and in some cases the availability of rehabilitative equipment. To qualify for a home

care program, the patient needs to be "homebound" aside from those times when he or she goes out of the house to a physician's office. Most health care insurance programs provide some coverage for home care.

There are a variety of rehabilitative services available in the outpatient setting. These range from comprehensive outpatient rehabilitation facilities which are interdisciplinary to multiple and individual discipline programs which have no interdisciplinary component.

CORFs (Comprehensive Outpatient Rehabilitation Facilities) are the most complex outpatient rehabilitation programs. In a CORF, as in the inpatient setting, a patients' individual needs are assessed by a team of specialists (the composition of which is similar to the inpatient setting). Goals are established and an interdisciplinary plan is implemented. Unlike single discipline programs the multiple specialists involved in a CORF meet regularly to discuss a patient's progress and to refine the goals of the program. The functionally complex patient who has the need for multiple services (eg, PT, OT, social work, and psychology) and has sufficient community support to live at home is the ideal candidate for a CORF.

The patient who does not need an interdisciplinary team process is likely to be an individual whose medical, functional, social and cognitive problems are relatively straight forward. These individuals will frequently have a need for only physical or occupational therapy. As such, the comprehensive team process or the restriction of an in-home or inpatient program are not warranted and may in fact be harmful. CORF and individual outpatient therapies are covered, at least in part, by most insurance carriers.

Summary

As the population of our nation and our state grows older operative procedures will be performed at increasing rates on older patients. Unique aspects of older persons and the conditions with which they are afflicted place them at high risk for loss of function, medical complications, and surgical complications in the perioperative period. Only by conducting comprehensive preoperative assessments, establishing appropriate goals, maintaining meticulous perioperative care and beginning rehabilitation early will it be possible to reduce these risks and maximize the functional outcome for the older surgical patient.

References

[1] Rabin, D., Stockton, P. *Long-term Care for the Elderly: A Fact Book.* Oxford University Press, New York, NY, p. 3; 1987.

[2] Soldo, B., Manton, K. Demography: implications of an aging population. In Rowe, J., Besdine, R. eds. *Geriatric Medicine*, 2nd ed. Little Brown, Boston, MA., p. 13; 1988.

[3] Kelly, B. Planning for aging in the 21st century. *American Journal of Preventive Medicine*, 3:18-22; 1985..

[4] Olak, J., Meakins, J. Epidemiology of Surgical Disease in the Elderly. In Meakins, J. and McClaran, J. (eds.) Surgical Care of the Elderly: Year Book Medical Publishers, Chicago, IL, 1988.

[5] Rosenthal, R., Dana, K. Surgery in the elderly. In Hazzard, W., Andres, R., Bierman, E., Blass, J. (eds.) *Principles of Geriatric Medicine and Gerontology*, 2nd ed. McGraw-Hill, New York, NY. 12990.

[6] Katz, S., Ford, A., Moskowitz, R. et al. Studies of illness in the aged: the index of ADL: a standardized measure of biologic an pyschosocial function. *JAMA*, 185:9814-9; 1963.

[7] Lawton, M., Brody, E. Assessment of the older people: self-maintaining and instrumental activities of daily living. *Gerontologist*, 9:179-86; 1969.

[8] Folstein, M., Folstein, S., McHugh, P. "Mini-mental state": a practical method of regarding the cognitive state of patients for the clinician. *J. Psychiatr Res.*, 12:189-98; 1975.

[9] Applegate, W., Blass, J., Williams, T., Instruments for the functional assessment of older patients, *NEJM*, 322:1207-1214; 1990.

[10] McCartney, J., Palmateer, L. Assessment of Cognitive Deficit in Geriatric Patients: a study of physician behavior. *Journal of the American Geriatric Society*. 33:467; 1985.

[11] Morley, J. Nutrition and Aging. In Hazzard, W., Andres, R., Bierman, E., & Blass, J. (eds.) *Principles of Geriatric Medicine and Gerontology*, 2nd edition. McGraw-Hill, New York, 1/9/90)

[12] Hill, G. et al. Malnutrition in surgical patients. *Lancet*, 1:689, 1977.

[13] Mitchell, C., Lipschitz, D. The effect of age and sex on the routinely used measurements to assess the nutritional status of hospitalized patients. *American Journal of Clinical Nutrition.* 36:340, 1982

[14] Young, V. Impact of aging on protein metabolism. In Ambrecht, H., Pendergast, J., Coe, R. Eds.: *Nutritional Intervention in the Aging Process*. Springer-Verlag, New York, p. 276; 1984.

[15] Liplin. E/. Enteral/parenteral alimentation. In Hazzard, Andres, Bierman, & Blass. *Principles of Geriatric Medicine & Gerontology*. p. 296-311.

[16] Rusk, H. Rehabilitation, *JAMA*, 140:286–292; 1949.

[17] Bonner, C. Rehabilitation instead

of bed rest? *Geriatrics*, 6:109-18; 19679.

[18] Warshaw, G., Moore, J., Friedman, W., et al. Functional disability in the hospitalized elderly. *JAMA*, 248:847-50; 1982.

[19] McVey, L, Becker, P, Saltz, C, et al. Effects of a geriatric consultation team on functional status of elderly hospitalized patients. *Ann Int Med*, 110:79-84; 1989.

[20] Hirsch, C, Sommers, L, Olsen, A. et al. The natural of functional morbidity in hospitalized older patients. *J Am Geriatr Soc*, 38:1296-1303; 1990.

[21] Allman, R, Met al. Pressure sores among hospitalized patients. *Annals International Medicine* 105:377, 1986.

[22] Allman, Pressure Ulcers. In Hazzard, W., Andres, R, Bierman, E, and Blass, J. (eds.) *Principles of Geriatric Medicine and Gerontology* 2nd ed. McGraw-Hill, NY. p. 1204; 1909.

[23] Evans, D., Funkenstein, H. Albert, M., et al. Prevalence of Alzheimers Disease in a community population of older persons: higher than previously expected. *JAMA*, 262:2551-56; 1989.

[24] Ketorolac Tromethamine, The Medical Letter, 32:79-81; 1990.

[25] Oster, G., Huse, M., Shelley, F. et al. Benzodiazepine tranquilizers and the risk of accidental injury. *Am J Public Health*, 80:1467-70; 1990.

◆ ◆ ◆

There must be a good reason why we've become the trusted back-up resource for more Rhode Island doctors (and their patients) than anyone else.

UNITED SURGICAL CENTERS

The Professionals in Home Health Care Equipment

We carry just about EVERYTHING for Home Health Care . . . which means, everything a patient or convalescent needs to implement the doctor's treatment directions. For Ostomy and Oxygen needs to Orthopedic Appliances, Wheelchairs, Walkers and Hospital Beds, we're here to serve your patients. Our staff is knowledgeable and dedicated to supplying exactly "what the doctor ordered". We've been doing it dependably for many years.

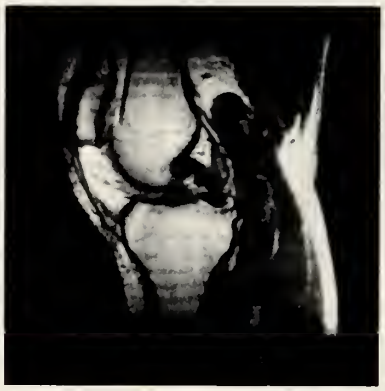
That's how we've earned the trust of so many doctors.

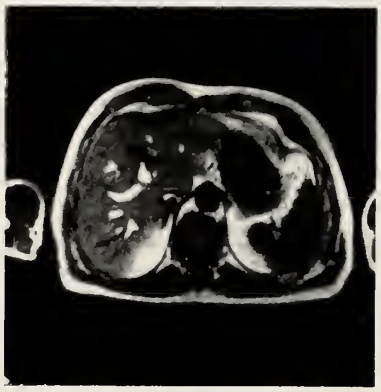
Medicare and Third Party Claims Accepted and Processed.

380 WARWICK AVE., WARWICK
781-2166

RI-MASS MRI, P.C. is pleased to sponsor the

2ND WEDNESDAY LECTURE SERIES





WHEN: The 2nd Wednesday
of each month
7:00pm - 8:00pm

THIS MONTH'S TOPIC...
"MRI of the Female Pelvis"
Wed., May 8, 1991

LECTURES TO RESUME
on
September 11, 1991

WHERE: Johnson & Wales Inn
Rt. 44 (Taunton Avenue)
Seekonk, MA 02771
(Just one block from RI-MASS MRI)

TO REGISTER/CALL: 1 (800) 848-9661

Trauma Care for the Elderly?

Pardon R. Kenney, MD
Eric J. DeMaria, MD
Donald S. Gann, MD

. . . the provision of trauma care for the injured elderly has been questioned, based largely on the assumption that such care may be fruitless. . .

Coincident with the aging of the American population has been a dramatic emphasis on improved trauma care. Trauma centers have become relatively common, and, although organized EMS systems are still a distant goal in many areas, the quality of trauma care has unquestionably improved. However, in an age of scarce health care resources, every expenditure must be evaluated for efficacy. In this context, the provision of trauma care of the injured elderly has been questioned, based largely on the assumption that such care may be fruitless. In this article, we will examine this assumption from a variety of perspectives, defining outcome after aggressive trauma care, factors that contribute to higher mortality in elderly patients, and finally the costs (and reimbursements) of such care.

Few previous studies have investigated the appropriateness of elderly trauma care. In Seattle, Oreskovich and colleagues[1] reported that geriatric trauma patients had a poor long-term prognosis. The questions raised by this study prompted a somewhat similar investigation at the Rhode Island Hospital Trauma Center. Sixty-three consecutive patients over age 65 were studied, all victims of blunt multiple trauma.[2] The outcome status of each patient was assessed both at hospital discharge and at long-term follow-up nine to 38 months after injury, and related to a number of variables including age, injury severity, sex, and the need for emergent or delayed surgery. At follow-up, independent patients (I) were living at home without outside assistance; dependent

Pardon R. Kenney, MD, formerly on the Departments of Surgery, Rhode Island Hospital and Brown University, is Chief of Surgery, Faulkner Hospital Boston, Massachusetts and Assistant Clinical Professor of Surgery, Harvard Medical School.

Eric J. DeMaria, MD, formerly on the Departments of Surgery, Rhode Island Hospital and Brown University, is Assistant Professor of Surgery at Medical College of Virginia, Richmond Virginia.

Donald S. Gann, MD is Professor and Vice Chairman, Department of Surgery, at the University of Maryland School of Medicine in Baltimore, Maryland. He was formerly on the Departments of Surgery, at the Rhode Island Hospital and Brown University.

ABBREVIATIONS USED:

CRD: Cost Reimbursement Deficit
DRG: diagnostically related group
EMS: emergency medical system
GTSS: Geriatric Trauma Survival Score
ICU: Intensive Care Unit
ISS: Injury Severity Score
p: probability

patients (D) were at home with some outside help; and nursing home patients (NH) were confined to a nursing home. An injury severity score (ISS) was developed for each patient as originally described by Baker.[3]

Prior to injury, our patient population was quite independent, 97% living on their own at home. After injury, one-third of these patients immediately returned to independent living at discharge. Another 37% required some assistance at discharge but could still be sent home, and 30% required nursing home admission. The latter patients tended to be older (76.7 ± 1.5 years vs 73 ± 0.2 years, $p<0.05$), sustained more in-hospital complications (1.1 ± 0.3 vs 0.4 ± 0.1, $p<0.05$), and experienced longer hospital stays. (44.5 ± 4.9 days vs 16.8 ± 1.9, $p<0.01$) Patients admitted to nursing homes also sustained more severe head and neck trauma, more frequently required operation after trauma (74% vs 39%, $p<0.05$), and were more severely injured. Importantly, mechanism of injury, number of body regions injured, and the presence of pre-existing cardiopulmonary disease were not predictive of nursing home admission.

Twelve of the 19 patients who were initially sent to a nursing home returned home, with a mean nursing home stay of 3.1 months. At the time of follow-up, ten of these patients had achieved dependent status at home and two were living independently. Also, thirteen of 23 patients from group D ultimately became independent at home. Thus, 89% of the surviving patients ultimately returned home, within group I (57%) or group D (32%). Only 11% of the total population required long-term nursing home care at follow-up. Of interest, there was no difference in injury severity between those patients who required permanent nursing home care and those who were able to return home.

Overall, we concluded from this portion of the study that elderly patients who survive injury have a good prognosis for living outside of an institutional environment. In toto, 89% of our patients returned to their homes, surely a result that justified the cost of their care.

Overall, four factors contributed to an increased risk of mortality: age, injury severity (ISS), and the presence or absence of cardiac and septic complications.

Since the ultimate outcome of elderly trauma survivors appeared favorable, we next evaluated the factors that contribute to increased mortality in this group. These survivors were part of a larger cohort of injured elderly whose overall mortality was 21%.[4] Nonsurvivors in this group were older, more severely injured, and had more severe head and neck trauma. These characteristics echo those of the survivors who required nursing home care at discharge. However, complications were far more common in the patients who die, (82% vs 32%, $p<0.05$). These include cardiac (53% vs 15%, $p<0.05$) and pulmonary (41% vs 15%, $p<0.05$) complications. Thirty-six percent of patients who developed pneumonia requiring assisted ventilation for five or more days expired. The "old elderly" (patients older than 80) had a dramatic increase in mortality when compared with patients aged 65-79 (46% vs 10%, $p<0.01$). Besides age, the only factors that were predictive of death in these patients were the number of complications they sustained.

Overall, four factors contributed to an increased risk of mortality: age, injury severity (ISS), and the presence or absence of cardiac and septic complications. Combining our original patients with an additional 61 consecutive blunt trauma patients, we developed a Geriatric Trauma Survival Score (GTSS) that accurately predicted outcome. The equation for the GTSS is as follows:

$$GTSS=0.9(age-65) + 0.6(ISS) + 14.9(SEPSIS) = 10.6(CARDIAC)$$

In this equation the presence of either cardiac or septic complications is designated with a "1" in the equation. Using an iterative least-square logistic curve-fitting model,[5] we derived a predictive mortality equation:

$$Mortality(\%) = 100-100/1+(GTSS/32.8)^{15.2}$$

This equation predicts a 50% mortality when the GTSS is 32.8.

A recent study from Albuquerque[6] confirms many of our findings. In this paper, 100 injured elderly patients were compared to a control group of 100 patients under age 65. Age and injury severity were strongly predictive of mortality, and complications were more frequent in non-survivors. Nonsurvivors also had more severe head and neck trauma, echoing our findings. Finally, the presence of shock in these patients was highly predictive of mortality.

It must be emphasized that

the GTSS successfully predicted outcome only in our own institution, and caution is advised before it can be applied more globally. Also, because it is based in part on the presence or absence of cardiac and/or septic complications, its prospective utility in the emergency department to predict mortality is probably minimal, since these complications are not apparent at admission. However, since complications do play such an important role in increasing the risk of mortality after trauma in the elderly, their prevention must be a primary goal of effective trauma care. This becomes even more important when one considers that the other two elements of the GTSS, age and injury severity, are not controlled. In view of the generally favorable outcome for those patients who survive trauma, routine ICU admission, aggressive pulmonary therapy, and basic cardiac monitoring might prevent complications and decrease mortality rates. This approach has been recently advocated by Scalea.[7]

. . . routine ICU admission, aggressive pulmonary therapy, and basic cardiac monitoring might prevent complications and decrease mortality rates.

To assess the adequacy of Medicare reimbursement for the injured elderly, financial data was studied for each of the initial eighty-two patients described above.[8] In addition, the reimbursement for a cohort of 636 blunt trauma patients under age 65 admitted contemporaneously with the elderly patients was also assessed. The DRG category assigned to each patient was the one that produced the best reimbursement for the hospital. The difference between projected DRG reimbursement and calculated hospital cost was defined as the Cost Reimbursement deficit (CRD).

The total cost for all patients was $6.25 million. It is sobering to realize that if, as has been recently proposed, these costs had been reimbursed solely under the DRG system, total reimbursement would have been only $3.7 million, or 50% of total costs. Focusing more specifically on the elderly, two distinct groups could be identified. The "younger elderly" (aged 65-79 years) represented 8% of the total population, generated 8.5% of the total hospital costs, and only 6% of the CRD. In contrast, although the "old" elderly represented only 3% of the total population, they generated 7% of the total costs and 11% of the total CRD. In this "old" subgroup, projected reimbursement covered only 39% of hospital costs.

Next, factors contributing to the CRD in the elderly were analyzed. The first of these was status at discharge. In the 19 patients discharged to a nursing home, hospital costs were significantly higher than in the 46 patients discharged directly home ($22,811 ± 3664 vs $6,696 ± 822, p=0.01). The mean hospital costs for the seventeen nonsurviving patients was $13,784 ± 3,285, with a corresponding average DRG reimbursement of $7,749 ± 774. Injury severity also had a powerful impact on costs. In the more severely injured elderly (ISS > 25), hospital costs were 87% higher than in those patients with ISS < 25. However, prospective reimbursement rose only 38% in these patients.

Complications had the single largest impact on increased costs. When more than one complication occurred in an elderly patient, average hospital costs rose 309%. Despite this dramatic increase, reimbursement rose only 8%! There was no correlation between either hospital costs or the presence of complications and projected reimbursement in this patient population.

Complications had the single largest impact on increased costs. When more than one complication occurred in an elderly patient, average hospital costs rose 309%.

If the DRG system is not altered to more accurately reflect the true cost of providing care, the inevitable result will be to limit access to care for certain high-cost groups. To prevent this disaster for injured elderly patients, modifications of the system for trauma must be made.[9] Our data suggest that age, severity of injury, and the number of complications are appropriate factors that should increase the DRG reimbursement for elderly trauma victims. Massive financial hemorrhage has already forced the closing of a number of respected trauma centers. As we approach the end of the second millennium, we must force our elected representative to define health care priorities in general and trauma care priorities in particular. There is clearly no more urgent task, and the clock is ticking.

Summary

The enormous consumption of health-care resources by bluntly injured elderly patients

can be justified if their outcome after trauma is good. In this series, 89% of injured elderly patients ultimately returned to their homes, either independent of (57%) or dependent on (32%) outside help. Factors contributing to increased mortality in such patients included age, injury severity, and the presence or absence of cardiac and septic complications. A Geriatric Trauma Survival Score (GTSS) was devised that predicted the likelihood of mortality in these patients. Finally, study of reimbursement indicated that Medicare does not adequately reimburse hospitals for the enormous cost of providing elderly trauma care.

References

1 Oreskovich, MR, Howard, JD, Copass, MK, Carrico, CJ. Geriatric Trauma: Injury Patterns and Outcome. *J Trauma* 1984; 24:565-571.

2 DeMarla, EJ, Kenney, PR, Merriam, MA, Casanova, LA, Gann, DS. Aggressive Trauma Care Benefits the Elderly. *J Trauma* 1987; 27:1200-1206.

3 Baker, SP, O'Neill, B, Haddon, W. et al.: The Injury Severity Score: A Method for Describing Patients with Multiple Injuries and Evaluating Emergency Care. *J Trauma* 1974; 14:187-196.

4 DeMaria, EK. Lemmeu, PR, Merriam, MA, Casanova, LA, Gann, DS. Survival After Trauma in Geriatric Patients. *Annals of Surgery* 1987; 296: 738-743.

5 Marciel, R. Curve Fitting. Four Parameter Logistic. In RIAA/AID User Directions. Arlington, MA: Robert Marciel Associates, 1985; A1-7.

6 Osler, T., Hales, K., Baack, B, et al. Trauma in the Elderly. *Am J Surg* 1988; 156:537-543.

7 Scalea, T, Duncan, A, Atwehn, T, Sclafani, S, Phillips, T, Shaftan, G. Geriatric Blunt Multiple Trauma: Improved Survival with Early Invasive Monitoring (ABST) *J Trauma* 1988; 28:1096.

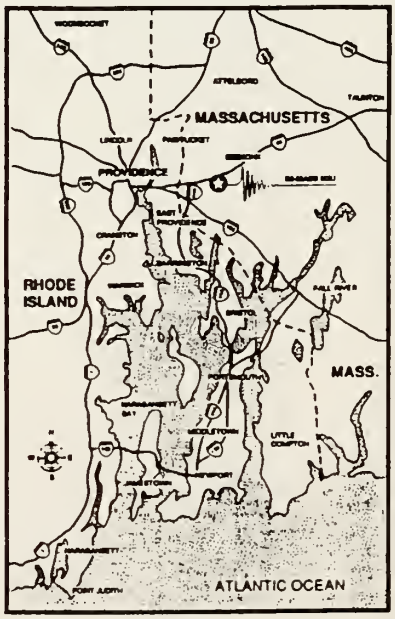
8 DeMaria, EJ, Merriam, MA, Casanova, LA, Gann, DS, Kenney, PR. Do DRG Payments Adequately Reimburse the Costs of Trauma Care in Elderly Patients? *J Trauma* 1988; 28:1244-1249.

9 Jacobs, LM. The Effect of Prospective Reimbursement on Trauma Patients. *Bull Am Coll Surg* 1985; 70(2):17-22.

MAGNETIC RESONANCE IMAGING

RI-MASS MRI, P.C.

309 Taunton Ave. (Rt 44), Seekonk, MA 02771



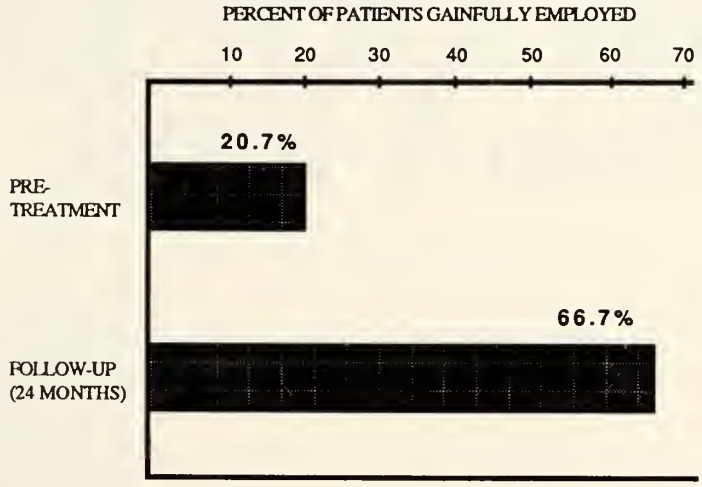
- Prompt Scheduling (within 24 hours)
- Pleasant Outpatient Setting
- High Quality Images (Sent to your office within 24 hours.)
- Latest Generation MRI Technology (3D and MR Angiography available)

RI-MASS MRI is a state of the art magnetic resonance imaging facility conveniently located on Taunton Avenue just blocks from the state line. To learn more about RI-MASS MRI or to receive more information about our facility (Rx pads, patient brochures, etc.) please contact Ruth Nash (Site Manager) at **1-800-848-9661.**

Patient Scheduling

1-(800)-848-9661

"CHRONIC PAIN DOESN'T HAVE TO MEAN CHRONIC DISABILITY FOR YOUR PATIENTS..."



The Chronic Pain Treatment Program
(401) 751-9150

Institute for Behavioral Medicine
120 Wayland Avenue
Providence, Rhode Island 02906-4318

Neurobehavior Neuropsychiatry

JEFFREY WISHIK, MD

Board Certified Neurologist

is pleased to announce
the joint opening of
his laboratory and
private practice.

Office Practice
specializing in
behavioral, emotional
and
cognitive manifestations
of neurologic disease.

Special interests include:
Mild Head Injury
Adult Hyperactivity

By referral:
(401) 722-2727

1145 Main Street
Pawtucket, RI 02860
(Providence/Pawtucket line)

Brain Mapping & Computerized Neurophysiology Laboratory

Neurodiagnostic testing for
developmental, neurologic and
psychiatric disorders:
Conventional & Computerized EEG
Topographic Brain Mapping
P300 Cognitive Evoked Response
Visual/Auditory Evoked Potentials

Scheduling:
(401) 726-2266

Please call for additional information

There's more to Portable X-Ray Service than X-Rays.

Yes, our main business is to provide you with fast, efficient, diagnostic X-Ray services, but we have much more to offer . . . including a staff of people who really care.

- Diagnostic X-Ray Services
- EKG
- Holter-Monitoring*
- Ultrasound Services*
- Same day reporting
- 24 Hour Service
- Seven days a week

*by appointment only

We service the entire Greater Rhode Island area:

- Nursing and Convalescent Homes
- Shut-ins and Private Home Patients
- Post Surgical Patients

PORTABLE X-RAY SERVICE

OF RHODE ISLAND

Certified by the R.I. Department of Health. Reimbursement provided by Medicare, R.I. Blue Shield and Medical Assistance.

100 Highland Avenue Providence, R.I. 331-3996	120 Dudley Street Providence, R.I. 331-3996	154 Waterman Street Providence, R.I. 273-0450	38 Hamlet Avenue Woonsocket, R.I. 766-4224

The Ethical Responsibility of Surgeons in Conflicts with Patients or Their Surrogates About Treatment

Dan W. Brock, PhD

... When a surgeon believes there is a medically best form of care . . . but the patient refuses consent to that treatment – What is the surgeon's responsibility in such circumstances?

Since virtually the full range of ethical issues that arise in the general medical care of patients arise as well in the surgical care of elderly patients, any selection of ethical issues for attention here is to some degree arbitrary. In a previous issue of this *Journal* I sketched an ethical framework for surrogate decision making for incompetent adults, together with the ideal of shared treatment decision making between physicians and competent patients on which that framework builds.[1] Here, I shall presuppose some familiarity with that framework and focus more closely on one central ethical issue which I believe can be especially prominent and troubling to surgeons caring for elderly patients. This is the conflict that rises when a surgeon believes there is a medically best form of care for the patient but the patient, or an incompetent patient's surrogate, refuses consent to that treatment plan and insists on an alternative treatment plan (or on the alternative of no treatment) instead. What is the surgeon's responsibility in such circumstances?

Dan W. Brock, PhD, is Professor of Philosophy at Brown University and an international authority on medical ethics.

I will consider this problem first in the case of a competent patient. The problem was far less common and pressing several decades ago when it was more widely accepted that the decision about treatment was properly the physicians and the patient's role was the relatively limited one of "following doctor's orders", as it was sometimes put. To be sure, the legal requirement that surgery not proceed without the competent patient's consent goes back at least to the celebrated case in 1914 of Schloendorff v. Society of New York Hospital in which Justice Cardozo held that:

"Every human being of adult years and sound mind has a right to determine what shall be done to his own body; and a surgeon who performs an operation without his patient's consent commits an assault, for which he is liable in damages."[2]

Nonetheless, ideal treatment decision making was commonly conceived along paternalistic lines with the physician deciding what treatment was best for the patient and then securing the patient's consent so that treatment could proceed. The vast advances in the last few decades of medical knowledge, training, and expertise, together with enlarged capacities to provide treatment to patients, might seem to make the case for the physician as treatment decision maker all the stronger today. Yet, in fact, the paternalistic ideal has been largely rejected, even if practice still often fits it, the legal requirement of informed consent has been strengthened, and patients now often expect a more active role in decisions about their health care.[3] Why has this happened and what does it imply for surgeons' responsibilities when

patients reject recommended treatment?

One reason for patients' more active role in treatment decision making has been increased recognition of the importance of people's interest in individual self-determination or autonomy – the interest of ordinary persons in making significant decisions about their lives for themselves and according to their own values and aims. This interest is not restricted only to cases in which individuals will be able to make the best decision, even by their own standards for the best decision. On the contrary, most persons wish to make such decisions even in many cases in which they would grant that others might be better able to decide for them. It is in the exercise of individual self-determination that we take control over and responsibility for our lives and the kind of persons we are and will become.

... the paternalistic ideal has been largely rejected ... the legal requirement of informed consent has been strengthened, and patients now often expect a more active role in decisions about their health.

At least as important as the value of individual self-determination is the recognition that increasingly often there is no single treatment alternative that would be best for all patients in similar medical circumstances. Part of the success of modern medicine has been the development of additional treatment alternatives for a variety of medical conditions, as well as the ability to treat patients in conditions in which no effective treatment used to be possible. As a result, the treatment alternative the surgeon considers medically best, for example in maximizing health and prolonging life, is sometimes not best, all things considered for a particular patient. Health is at bottom an instrumental value, important in permitting and enabling people to pursue the aims and activities they value. Which treatment alternative in all things considered best for a patient will depend on the effects of alternatives on the patient's valued aims and activities, and thus often cannot be determined by the "medical facts" alone. There are two kinds of conflicts between surgeons and patients about treatment that should be distinguished.

In the first, there are alternative medically acceptable modes of treatment for a particular condition, no one of which is medically best for all patients, and only broad consideration of particular patient's aims and values can determine which alternative is best for him or her. Classic examples include the several surgical alternatives of the treatment of breast cancer and the alternative of surgery versus "watchful waiting" for benign prostatic hypertrophy.[4] Surgeons will inevitably have their own views about indicated or optimal treatment, whether the principal choice is from among surgical alternatives or between surgical and non-surgical alternatives. The work of John Wennberg demonstrating the great practice variations in different geographical areas for such procedures as hysterectomies or carotid endarterectomies suggests the powerful effects that the surgeon's own preference about treatment can have on the treatment decision.[5] Nevertheless, the responsibility of the surgeon when choice is from among medically acceptable alternatives is to help the patient understand how the different alternatives would likely affect what is important to the patient in his or her life so they can together determine which alternative is best for the patient.

The second and harder kind of case is when the surgeon believes there is a single treatment alternative that clearly would be medically best for the patient, but the patient refuses consent to undergo it; examples include refusal of amputation for a gangrenous limb or refusal of surgery for an aortic aneurysm. These cases range along a broad spectrum in the degree of apparent seriousness of the adverse effect on the patient's well-being from his or her decision about treatment. Such refusals of recommended treatment often trigger a competence evaluation, although refusal of treatment should not in itself serve as any evidence of incompetence. The proper determination of incompetence is a complex matter that I do not address here.[6] But supposing that the patient appears to be competent, what would patients reasonably want from their physicians in such circumstances?

Perhaps a few physicians, overreacting to the earlier paternalist ideal, understand their role here as simply to provide the patient with the facts about his or her diagnosis and prognoses with different treatment alternatives, leaving it to the patient to choose an alternative without any recommendation from them. But this fits neither

the desires of patients nor the realities of caring for seriously ill patients.[7] Patients quite reasonably want the recommendations of their surgeons about which treatment would be best for them, although they usually want also to be given the basis for the recommendations and to have the recommendations take account of their own particular aims and values. There is no conflict between the ideal of shared decision making and the surgeon fulfilling his or her professional responsibility in providing a recommendation to the patient about treatment. Moreover, the effects of serious illness, together with the fear, anxiety, and regression that often attend it, can impair substantially patients' ordinary decision making capacities. As a result, patients quite reasonably would not want their surgeons to accept too readily patients' treatment choices when the surgeons believe these choices would be seriously harmful to the patients.

Part of the success of modern medicine has been the development of additional treatment alternatives for a variety of medical conditions...

Surgeons' responsibilities in such cases require a delicate balancing of two potentially conflicting roles. On the one hand, as patients, we want our surgeons to be advocates for our well-being, and for the treatment that in their professional judgment will best serve our well-being. The more a particular treatment choice appears to seriously conflict with our own well-being, the stronger advocates we reasonably want our surgeons to be for the treatment they judge to be best for us. On the other hand, patients also reasonably want their surgeons to appreciate and accept that a patient's unusual aims and values can make a treatment alternative that would be best for most persons not be best for him or her. Surgeons must also be sensitive to the ways in which the relative importance of particular values often differ in elderly patients, especially when those patients are critically or terminally ill; for example, life extension often recedes in importance in comparison with maintaining quality of life and comfort. An especially important instance of this shift in values arises in locus of care decisions when many elderly are willing to assume significant risks to their well-being in order to remain independent and in their homes. At the same time, it would be a mistake simply to assume that a particular elderly patient must want what most other elderly patients want. The delicate balancing required of surgeons, then, is between being strong advocates for their best judgment of their patients' well-being while remaining open to being convinced that the patient understands the alternatives and prefers an alternative different from what most persons or the surgeon consider best. While surgeons must ultimately accept a competent refusal of treatment by the patient, even if still convinced it is a mistake, they are not obliged to provide a treatment to a patient who wishes it when doing so would violate their professional norms or deeply held moral views.

Until now I have focused on cases in which only the surgeon and competent patient are parties to treatment decision making. But competent elderly patients often come with family members, and these family members often seek a role in treatment decisions. There is no ethical objection to also involving family members in discussions or decisions about a patient's care to the extent that a competent patient makes clear he or she wishes that involvement. Family members, however, are sometimes permitted to replace a competent patient in decision making without that patient's consent. For example, one study of resuscitation decisions in three teaching hospitals found that in at least 13 of the 72 decisions not to resuscitate, the decision had been discussed with the family and not with the patient, even though the patient was judged to be competent.[8]

Surgeons and/or family members may sometimes have reasonable concerns about possible harmful effects on a competent patient of involving him or her in treatment decision, though to my knowledge there are no systematic data establishing that doing so is commonly harmful. Probably of greater importance in such cases is that it is often easier – less stressful and less uncomfortable – for both surgeon and family if they make difficult treatment decisions together without involving the patient. Aggressive and seemingly well-intentioned families sometimes strongly press physicians to withhold information and involvement in decision making from a competent patient. Nevertheless, I believe the consensus both within medical ethics and the law that competent patients are entitled

to be involved in decisions about their care is sound. There is virtually never adequate justification for the still too common practice of denying them that involvement.

When the patient has been correctly determined to be incompetent to make the decision at hand a family member is usually the appropriate surrogate to replace the patient decision making. The reasons for the selection of a family member as surrogate, some of which are discussed in my previous paper in this *Journal*, include that a family member will usually be best able to determine what the patient would have wanted and that a family member will usually be the person the patient would have wanted to act as his or her surrogate.[9] The reasons supporting family members acting as surrogates for incompetent patients do not require, on the one hand, that the surrogate always make the best choice – that would be too high a standard – but also do not justify, on the other hand, the surrogate having unlimited decision making discretion – the surrogate's authority is properly limited by the patient's express wishes, while competent, and fundamental interests.

. . . competent elderly patients often come with family members, and these family members often seek a role in treatment decisions.

When a family member acting as surrogate for an incompetent patient rejects the treatment plan the surgeon considers best for the patient and insists on a different treatment alternative (or the alternative of no treatment), a delicate balancing of responsibilities analogous to that necessary with competent patients is again required of the surgeon. Surgeons' responsibilities would be clearer if they should either always defer to the family member's choice or never defer to what they judge not to be the best choice. But neither of these alternatives is defensible, and neither takes adequate account of the complexities and often ineliminable uncertainties of difficult treatment choices. As with the competent patient, here too the surgeon's recommendation about treatment should reflect his or her judgment of what course of treatment will best serve the patient's overall well-being, not simply what best serves "health and life," narrowly construed. While an incompetent patient's self-determination cannot be respected as it is with competent patients by directly involving the patient in decisions about treatment and care, surgeons can serve it in two other respects.

First, the person the patient would have wanted to decide for him or her can be involved in decision making, which lacking explicit evidence to the contrary is reasonably presumed to be a close family member. Second, one aspect of our interest in self-determination is our interest in important decisions about our lives being made in accordance with our own aims and values, not someone else's' different conception of what would be best for us; both surgeon and family member can and should seek to do this. This is not to say, of course, that the surgeon will always be clear about what would best serve the patient's aims and values or about whether the family member is reasonably representing those aims and values. The surgeon's responsibility once again is to stand as advocate, though now with the family member who is acting as surrogate, for his or her judgment of what best serves the patient's wishes and well-being, and to oppose a surrogate's choice when it is apparently contrary to them. But this advocacy must be coupled again with an openness to being persuaded that the surrogate's choice reasonably accords with the patient's wishes and well-being, even if it is not what most other persons or the surgeon would choose, and when so persuaded to defer to that choice. The surgeon's balancing of these two roles can be especially difficult and controversial with incompetent patients where conflicts of interest and other emotional and psychological conflicts between patient and surrogate can greatly complicate decision making.

. . . a surgeon should not in the end accept a surrogate's decision that is in serious conflict with the patient's wishes or interests.

As noted earlier, a surrogate's authority is properly limited by the patient's previously expressed wishes and fundamental interests. This implies that a surgeon should not in the end accept a surrogate's decision that is in serious conflict with the patient's wishes or interests. In such cases, resort to the courts may ultimately be necessary to clarify the surrogate's authority to make the decision

in question.

Just because reasonable patients can disagree about many surgical treatment decisions, these decisions can be particularly difficult and troubling when the patient is incompetent and evidence about the patient's wishes is ambiguous or conflicting, limited or non-existent. When this is so, whatever decision a surrogate makes, and whatever treatment plan is ultimately pursued, doubt quite understandably remains about whether the appropriate choice was made. When the surrogate's decision is contrary to what most persons would want in the circumstances, this doubt is only exacerbated. Finally, evidence showing significant conflict between the treatment choices of older patients and their potential proxies should serve as a further reminder of the inevitably imperfect nature of surrogate decision making practices.[10]

Probably the most important means of reducing the conflicts that arise when surrogates make apparently bad choices is taking preventive measures, which might be called "preventive ethics," in the form of advance planning for later decision making incompetence. This will require surgeons to discuss with patients while they are still competent their wishes about future care under possible future conditions. The details of future eventualities, of course, will often be largely unpredictable, but especially in the case of chronic or progressive diseases, or of surgery with known significant risks of outcomes in which the patient would be incompetent, the broad character of many future decisions can be anticipated. However, because significant uncertainty about future decisions is inevitable, it is important to err on the side of discussing even unlikely outcomes if guidance is to be available later when it is needed. For example, one study showed that for a substantial majority of patients resuscitated during a one year period in a teaching hospital, the physicians caring for them had considered cardiac arrest unanticipated.[11]

Surgeons have an important responsibility to initiate and carry out discussions with patients to obtain whatever guidance patients are able to give them about their wishes concerning future care.

Surgeons have an important responsibility to initiate and carry out discussions with patients to obtain whatever guidance patients are able to give them about their wishes concerning future care. There are many practical means of securing this guidance. In Rhode Island, Durable Powers of Attorney for Health Care give legal force to persons' designation of who they wish to have act as surrogate for them in the case of future incompetence, and allow persons to give legally binding instructions to those surrogates about their wishes concerning care. In order to facilitate more comprehensive instructions than advance directives such as living wills typically provide, a new medical directive has been proposed covering common circumstances in which decisions must be made.[12] But perhaps most important is simply discussing with patients early in their care and while they are still competent their wishes about future treatment. This will certainly not eliminate all treatment decision making conflicts of the sort I have been concerned with in this paper, nor provide easy solutions to it. The elimination of difficult decisions, laced with uncertainty, ambiguity, and conflict, is no more to be expected in medical ethics than in medicine itself. Advance planning and discussions with patients can, however, substantially reduce the unnecessary difficulty of many cases of conflict between surgeons' judgments about optimal care and surrogates' decisions about that care.

References

1 Dan W. Brock, "Surrogate Decisionmaking for Incompetent Adults," *Rhode Island Medical Journal* (1991). These and related issues are addressed in much more detail in Buchanan AE, Brock DW, *Deciding for Others: The Ethics of Surrogate Decisionmaking* (Cambridge: Cambridge University Press, 1989).

2 Schloendorf v. Society of New York Hospital (1914). 322 NY, 1215, 105 NE 92, 95.

3 President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Making Health Care Decisions* (Washington DC: US Government Printing Office, 1982).

4 Barry MJ, Mulley AG, Fowler FJ, Wennberg JE, "Watchful Waiting vs Immediate Transurethral Resection for Symptomatic Prostatism: the Importance of Patient's Preferences," *JAMA* 1988; 259:3010-3017.

5 Wennberg JE, Freeman JL, Shelton RM, Bubolz TA, "Hospital Use and Mortality Among Medicare Ben-

eficiaries in Boston and New Haven," *New England Journal of Medicine* 1989; 3092: 1168-1173.

[6] I discuss the evaluation of decisionmaking competence briefly in "Surrogate Decision making for Incompetent Adults," *op. cit.*, and in greater detail in Chapter One of *Deciding for Others: The Ethics of Surrogate Decisionmaking, op. cit.*

[7] Brock DW, Wartman SA, "When Competent Patients Make Irrational Choices," *New England Journal of Medicine* 1990; 322:1595-1599.

[8] Evans AL, Brody BA, "The Do-Not-Resuscitate Order in Teaching Hospitals," *JAMA* 1985;' 253:2236-2239.

[9] "Surrogate Decisionmaking for Incompetent Adults," *op. cit.*

[10] Zweibel NR, Cassel, CK, "Treatment Choices at the End of Life: A Comparison of Decisions by Older Patients and Their Physician-Selected Proxies," *The Gerontologist* 1989; 29:615-621.

[11] Bedell SE, Delbanco TL, "Choices About Cardiopulmonary Resuscitation in the Hospital," *New England Journal of Medicine* 1984; 310:1089-1093.

[12] Emanuel LL, Emanuel EJ, "The New Medical Directive: A New Comprehensive Advance Care Document," *JAMA* 1989; 261:3288-3293.

FYI
The average employer spends $2,300-$2,600 per employee for health insurance premiums.
A message from The American Medical Association for the Health Access America Proposal

BROWN UNIVERSITY AIDS PROGRAM

Primary Provider AIDS Education Program

May 22 and 29, 6:00 - 9:00 pm
Brown University

The Brown University AIDS Program, with the assistance of the New England AIDS Education and Training Center, is sponsoring a program to train primary care providers in issues surrounding AIDS and human immunodeficiency virus (HIV) infection. Our goal is to facilitate comfort in the evaluation and management of individuals with HIV infection, and to increase knowledge of resources available for appropriate triage.

Topics to be covered include:

Epidemiology and Natural History of AIDS/HIV Infection

Testing for HIV Infection

Antiretroviral and other Therapies

Clinical Management of the HIV-Infected Patient

Infection Control Practices

Community Resources Available in RI and SE Massachusetts

Lectures will be followed by clinical case discussions.

For more information, contact Ellen LaPointe at (401)-863-1725, or by mail at Box G-S204 Brown University Providence, Rhode Island 02912.

§§§

The Brown University Program in Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians. This CME activity has been approved for six credit hours in Category 1 of the Physician's Recognition Award of the AMA.

QUESTION:

WHAT ARE THE THREE MOST IMPORTANT THINGS TO CONSIDER WHEN CHOOSING AN INSURANCE AGENCY?

ANSWER:

EXPERIENCE, EXPERIENCE, EXPERIENCE

INSURANCE SINCE 1879

STARKWEATHER & SHEPLEY INC. - (401) 421-6900

Morton Smith, Inc. - (401) 861-6800

155 South Main Street
Providence, Rhode Island 02903

For your insulin-mixing or NPH-using patients

Humulin 70/30 makes life easier

Rapid onset and sustained duration insulin activity in a single vial

- May offer enhanced control through a more physiologic activity profile
- Accurate dosing—eliminates mixing errors
- Convenient premixed dose for better compliance
- Easy to use—for patients who find mixing difficult

Specify

Humulin® 70/30

70% human insulin isophane suspension
30% human insulin injection (recombinant DNA origin)

Humulin has just the right mix

Any change of insulin should be made cautiously and only under medical supervision.

Changes in refinement, purity, strength, brand (manufacturer), type (regular, NPH, Lente®, etc), species (beef, pork, beef-pork, human), and/or method of manufacture (recombinant DNA versus animal-source insulin) may result in the need for a change in dosage.

Leadership In Diabetes Care

Lilly

Eli Lilly and Company
Indianapolis, Indiana
46285

© 1991, ELI LILLY AND COMPANY HI 2921-B-149322

HEALTH BY NUMBERS

Rhode Island
Department of Health
H. Denman Scott, MD, MPH
Director of Health

Hospitalizations for Surgery Among the Elderly

Rates of hospitalization are higher among the elderly than among younger persons in the population. In 1988 persons age 65 or older represented 14.7% of Rhode Island's population but accounted for 34% of the 135,853 discharges from Rhode Island's community general hospitals.[1] Among the very elderly, those age 85 or older, hospitalization rates were even higher, with 518 hospitalizations per 1,000 population compared to 245 per 1,000 among those age 65 to 74 and 382 per 1,000 among those age 75 to 84.

Fewer than half of the hospitalizations among the elderly involved a surgical procedure during the stay, with 39% undergoing one or more surgical procedures, another 25% undergoing only procedures classified as non-surgical, and 36% involving no procedures at all. (Figure 1) The proportion of discharges with surgery was lowest among the very elderly, falling from 43% of discharges age 65 to 74 years to 33% of discharges age 85 years or older. The average length of stay for surgical patients was also found to vary with age, from 12 days per stay among those ages 65-74 to 19 days among those ages 85 and over. (Figure 2) Overall, hospitalizations of elderly patients undergoing surgery accounted for 233,000 days of inpatient care in 1988, or 22% of all inpatient care provided in the state's community general hospitals.

The most common surgical procedure performed on patients ages 65 and older during this period in Rhode Island was the prostatectomy, with 1,282 instances of such surgery recorded among the total of 46,154 elderly discharges. Prostatectomy was followed in rate of occurrence by cardiac catheterization, excision of skin lesions, and cholecystectomy. (Table 1) (For elderly females taken separately, the most common surgical procedure was cardiac catheterisation.) National figures for 1988 show cardiac catheterization to have been the most common inpatient procedure among the elderly, followed by prostatectomy, pacemaker procedures, and excision of skin lesions.[2] In general, the surgical procedures performed most commonly on elderly Rhode Islanders mirror those performed nationally, except for lower observed rate for major cardiovascular procedures locally.

Table 1. Most Commonly Performed Surgical Procedures among Hospital Inpatients Ages 65 Years and Older, Rhode Island, 1988.

Procedure Category	# Performed
Prostatectomy	1,282
Cardiac catheterization	976
Excision or destruction of lesion of skin or subcutaneous tissue	843
Cholecystectomy	743
Open reduction of fracture except jaw	703
Pacemaker insertion, replacement, removal, repair	651
Arthroplasty and replacement of hip	516
Repair of inguinal hernia	512

Figure 1. Hospital Discharges by Procedure Category, Ages 65 Years and Older, Rhode Island, 1988.

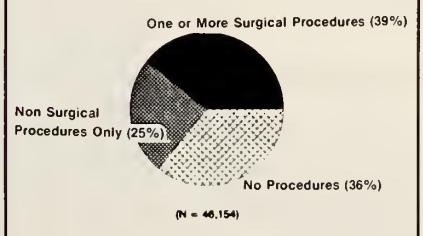
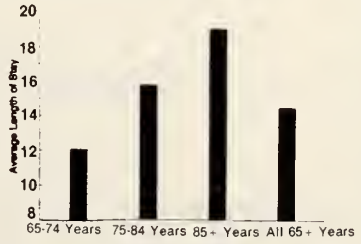


Figure 2. Average Length of Stay for Hospital Discharges with Surgery, by Age Group, Rhode Island, 1988.



References

1. Rhode Island Department of Health. Rhode Island Hospital Discharge Data, Fiscal Year 1988. (Data are not adjusted for out-of-state hospitalizations.)
2. Graves E J. 1988 Summary: National Hospital Discharge Survey. Advance Data from Vital and Health Statistics, No. 185. Hyattsville MD: National Center for Health Statistics, June 1990.

Submitted by the Office of Health Statistics, Jay S. Buechner, PhD, Chief. Health by Numbers *is edited by Jay S. Buechner, PhD, and William J. Waters, Jr., PhD.*

MEDICAL OFFICE SPACE
FOR RENT

1339 SMITH STREET
NORTH PROVIDENCE, RI
(2 Blocks from Fatima Hospital)

Approximately 1000 S.F.

$275.00 Per Month
Utilities Included

Ample On-Site Parking
Near Intersection of High Service Avenue
and Smith Street

For Information Contact
Mr. Caldarone

861-1818

BARRINGTON
MEDICAL CENTER ASSOCIATES

Professional Suite for Lease

Modern Building
Air Conditioned
Ample Parking
Radiology and Laboratory
on premises
Easy Access to 195

For Information

1525 Wampanoag Trail
East Providence, RI 02915

433-1535

SAVE THESE DATES

MAY 23-24, 1991

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				8:00-4:00 23	8:00-12 24	

FOURTEENTH ANNUAL SEMINAR

Current Concepts in Fetal & Neonatal Care

SHERATON ISLANDER — Newport, R.I.

Registration by May 17th to:

PERINATAL CONFERENCE
Rhode Island Medical Society
106 Francis Street, Providence, RI 02903

$140/Physicians
$ 80/Nurses

CME/CEU
Applied For

LUNCH ON
THURSDAY
INCLUDED

LAW OFFICE
OF
HERBERT M. ADAMS, J.D.

GENERAL LAW PRACTICE
MEDICAL COLLECTIONS

GOVERNOR FINANCIAL CENTER
P.O. Box 2502
285 Governor Street
Providence, Rhode Island 02906
(401) 421-1364

CHOICE SUITES
AVAILABLE
FOR LEASE

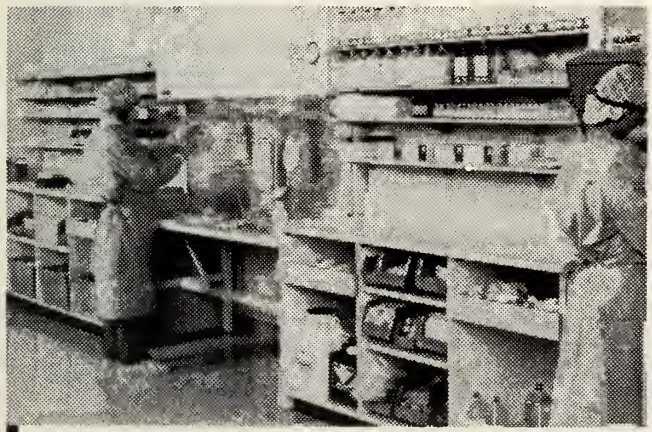
Attractive medical building.
X-ray facility, lab and private busy emergency room available.

1150 Reservoir Avenue
Cranston, RI

946-2400
Ask for Donna Ladd

CLINICAL I.V. NETWORK

The Margin of Difference in Home Infusion Therapy



IV ANTIBIOTICS, CHEMOTHERAPY, IV PAIN MANAGEMENT, TPN AND OTHER INFUSION THERAPIES

CLINICAL IV NETWORK is affiliated with VNA of Rhode Island

YOU MANDATE SERVICE.

All of our nurses are experienced in the latest high-tech therapies. Through commitment and experience, our nurses provide . . .

THE MARGIN OF DIFFERENCE.

CALL 401/751-9120
67 CEDAR ST. • SUITE ONE • PROVIDENCE, R.I. 02903

CONTEMPORARY PROBLEMS IN MEDICINE

Should Practicing Physicians be Routinely Tested for the AIDS Virus?

Earlier this year the United States Public Health Service conditionally expressed the view that practicing physicians should be periodically tested for the HIV (AIDS) virus. The USPHS opinion was based upon the alleged danger that an HIV-positive physician may unknowingly transmit the HIV virus to an innocent patient. In recent months there have been numerous newspaper editorials endorsing this suggestion for the testing of physicians. An editorial in the February, 1991 issue of the Rhode Island Medical Journal, on the other hand, deplored this recommendation.

Printed below are four commentaries on this issue submitted by Kathleen C. Hittner, MD (President-Elect, Rhode Island Medical Society), Joseph J. England, MD (Past President, Newport Medical Society), Frank J. Schaberg, Jr, MD (President, Pawtucket Medical Association), and Pablo Rodriguez, MD, Chairperson, RI Minority AIDS Task Force.

Mandatory HIV testing of physicians to be used in determining how their medical practices will be conducted is to be deplored. There is no evidence that periodic testing would do anything to decrease the spread of this disease. The risk of a patient acquiring the AIDS virus from an infected doctor is infinitesimal. In fact, there has been no clear-cut evidence that the risk even exists. Even the case in Florida where a young woman allegedly acquired the virus from her dentist is still under question. Justifiably, the American public is very concerned about this case. However, let this issue be approached in an orderly, scientific fashion with the gathering of FACTS and assessment of risk. Then appropriate solutions can be proposed, evaluated and adopted as policy.

Infected patients have transmitted the virus to several health care workers. Transmission in this fashion has been thought to be more likely than the reverse. However, all patients are not tested and physicians notified of results. Universal testing has been thought to impinge on the rights of patients. Instead, the medical community in a responsible fashion adopted universal precautions to prevent the spread of this virus and other infectious diseases. In addition, there has been and continues to be active research to improve infection control techniques and to introduce equipment to protect patients and physicians from contaminating each other.

Mandatory testing of physicians in an effort to prevent spread of this disease raises many difficult issues which would be impossible to resolve at this time. A primary issue would be which physicians should be tested and how this information would be used. Some advocates would like to see only those physicians who perform invasive procedures tested and would use this information to curtail the practice of a physician who tested positively. Others would have all physicians tested. Clearly, confidentiality, false positive tests, frequency of testing, and history of significant exposure to the

HIV virus would need to be addressed in any final policy. The cost of carrying out such policy would be prohibitive. The general public would be much better served by support and research into better techniques and equipment to prevent the spread of this disease in the health care setting.

Physicians have been very sensitive to the confidentiality rights of HIV positive patients and have participated in the formulation of laws to protect the public against indiscriminate HIV testing. Physicians should be afforded the same consideration.

There is no benefit to be derived from mandatory HIV testing of physicians and subsequent restriction of their practices. Let us approach this problem in a scientific, orderly fashion that will benefit both health care workers and the public which they serve.

Kathleen C. Hittner, MD
President-Elect,
Rhode Island Medical Society

◆ ◆ ◆

As a physician who cares for AIDS patients in my practice, I have been seriously considering the current proposal to routinely test all physicians for HIV. This issue is being brought to the forefronts since the possible transmission of HIV from a dentist to a patient was reported. The majority of physicians are caring for known HIV infected patients without bias. We also realize that we are caring for many who are HIV positive without being diagnosed. For this reason, the practice of universal blood and body fluid precautions is followed by all health care professionals. These precautions make transmission of HIV from patients to health care workers and from health care workers to patients a minute possibility. The possible transmission of HIV from dentist to patient still needs to be conclusively verified.

The institution of mandatory HIV testing for physicians certainly has the potential to do more harm than good. No one likes to be forced to do anything. Some physicians who are forced to have testing done may subsequently decide not to care for known HIV infected patients. With the number of cases growing steadily we cannot afford to lose health care workers who will care for them.

With the institution of mandatory testing of physicians there will be a greater demand by physicians for mandatory testing of all patients as well. So far this has not been allowed by the courts. Another concern would be how often to test physicians for HIV. The current information about seroconversion to HIV suggests that it may take six months to turn positive for the antibody. Are all physicians to undergo testing every six months? That would be a tremendous undertaking. As the number of tests increase so do the probability of error. The greatest risk to the patient may be the loss of their personal physician due to enforced practice restrictions compared to the extremely low risk of acquiring HIV.

In this time of skyrocketing medical costs we need to look at the cost of such a testing program, is there a reasonable cost/benefit ratio? It is highly unlikely. Good education and the use of universal precautions are a great deal less expensive. Let's leave Big Brother out of this for the moment and stay away from a policy of mandatory HIV testing for physicians.

Joseph J. England, MD
Past President,
Newport County Medical Society

◆ ◆ ◆

The impact of AIDS on the social, moral and ethical thinking and behavior of our society has been enormous. Parents who a generation ago would have been reluctant to openly discuss sex and drug issues with their children now do this freely, often at a young age. The interest in protecting ourselves individually and collectively as a society from the spread of this lethal infectious disease is universal. The widespread dissemination of information about the mode of transmission of this disease has, however, placed unique implications on its diagnosis and created significant barriers to the development of rational policies for its control based on epidemiological facts and principles.

The consideration of policy guidelines for the protection of the public by the US Public Health Service by periodically testing all health care workers for the presence of HIV infection has recently had widespread reporting. Since its inception, this idea has met with strong response from both professional and lay organizations. A recent editorial in the Providence Journal Bulletin by Nicolas Hentoff, entitled "Protecting the

Patient", unequivocally endorsed the mandatory testing of health care workers involved in invasive procedures, and the prohibition of anyone testing positive from the participation in such procedures. His argument implied both a significant risk to the patient from an HIV positive health care worker and a callousness on the part of health care professionals in wanting to "hide" such information from the public. It is a rare person in any walk of life who would not want to know if they were HIV positive. Physicians are acutely interested in their own HIV status, possibly more so, but certainly not less than any other segment of the population, for they too have personal and family concerns as well as public health and livelihood interests.

Those at substantial risks during invasive medical procedures are those performing the procedure and not the patient. The testing of individuals performing invasive procedures would to the best of anyone's knowledge have no impact on the spread of the AIDS virus. Testing of individuals undergoing invasive procedures could have a significant impact.

Of particular interest to physicians is the recent concept that early, virtually immediate treatment with AZT following exposure to the AIDS virus may well protect the inoculated individual. As this type of information is disseminated, the frequency and diligence of HIV surveillance among health care personnel will rapidly escalate. The use of this information, however, obviously depends on knowing the HIV status of the patient.

We all await the lifting of the social and moral stigma of the diagnosis of AIDS and its return to its rightful place as a medical problem. The development of rational policies for the testing of individuals, be they health care workers or patients, is the unfulfilled urgent task of the Centers for Disease Control. There is no other serious contagious disease in the recent history of mankind for which physicians have needed specific patient permission for testing.

Protective clothing worn by physicians during the plague outbreak in the early eighteenth century.

From the public health perspective, the issue of what to do with information about the HIV status of a health professional who may represent a danger to patients is a critical issue. Although scientifically we believe that the use of universal precautions with all patients and extraordinary precautions in high risk or proven AIDS patients is effective in preventing contamination of both the patient and the physician, the impact on the individual of even a single transmission is immense.

Most states are developing individual guidelines for assisting physicians in making these ethical decisions necessary for the safety of their patients as well as their fellow workers, families and patients. I believe that with current knowledge, the testing of patients with significant risk factors for AIDS should be made less cumbersome, and that mandatory periodic testing of all heath care workers in the absence of significant risk factors would be ineffective.

Until there is an effective treatment for AIDS, or vaccine for its prevention, I believe that HIV positive health care professionals involved in significant invasive procedures in which there is even a small risk of the operator's body fluids coming in contact with the patients should voluntarily refrain from continuing those procedures. Although the risk to patients is infinitesimal in the individual instance, it is ethically unacceptable to subject patients to that risk.

Frank J. Schaberg, Jr, MD
President,
Pawtucket Medical Association

◆ ◆ ◆

Since the beginning of the HIV/AIDS epidemic many health professionals have advocated mandatory screening of patients undergoing surgery in order to prevent transmission to health care workers. The recent case

of a Florida dentist with AIDS who allegedly transmitted the virus to some of his patients has brought a new dimension to the issue. The knee jerk reaction to such an isolated case is to screen all surgeons and dentists for the virus, and exclude those who are positive from engaging in invasive procedures which could possibly expose patients to the immeasurably low risk of transmission. If present trends continue, I foresee a world where we will all carry an up-to-date HIV Test card to be presented along with our insurance card when we sign in at the doctor's office. Likewise, physicians will prominently display next to their diplomas, their HIV status certificate. All in the interest of a policy that has no precedent and no hard data behind it.

Many experts (both recognized and self-proclaimed) have argued for such a world in order to treat AIDS like any other disease. They claim that we do not require consent for testing of other sexually transmitted diseases; therefore to give HIV infection a special status is discriminatory. But AIDS is unlike any other disease. No other condition renders a person vulnerable to the loss of friends, family, job, and even human touch, as HIV infection does.

But let's assume for the sake of argument that we will treat HIV infection as any other serious viral infection. Case in point: Hepatitis B virus (HBV). The risk of viral transmission to a patient from an HBV-infected worker is much greater than the risk from an HIV-infected worker. Granted, the consequences of HBV infection are less devastating, however it is associated with substantial morbidity and significant mortality. Presently there are no guidelines for universal screening of patients or health care workers for HBV, therefore restrictions to practice do not exist. To advocate universal HIV screening while disregarding other serious infections represents a double standard. If a consistent application for risk standard is to be applied, universal screening for HIV infection would necessarily lead to the screening of other conditions which statistically carry greater risk to patients. This would include Hepatitis, alcohol, drugs and even stress.

Finally, the logistical nightmare of applying this policy would be exemplified by the dilemma of the accidental cut or needle puncture which are a daily occurrence in hospitals across the country. Since a 6-month window of seronegativity may exist in a person who is already infected based on this standard of risk, the exposed surgeon must be excluded from performing invasive procedures for at least that long. This will further discourage physicians from caring for HIV+ patients, setting the stage for chaos in the health care system.

Medicine is a risky business regardless of what precautions we take. Knowledge of HIV status has been shown not to protect heath care workers from accidental exposure. Likewise when a comparative risk analysis is made, universal screening of health care workers is not cost effective. We must approach the information coming out of this single incident in Florida with caution in order to develop public policy based on science, not on fear.

Pablo Rodriguez, MD
Chairperson
RI Minority AIDS Task Force

FOR LEASE

MEDICAL SUITE

EAST BAY OFFICE PARK

1445 Wampanoag Trail
East Providence, RI
1/2 mile from Barrington line

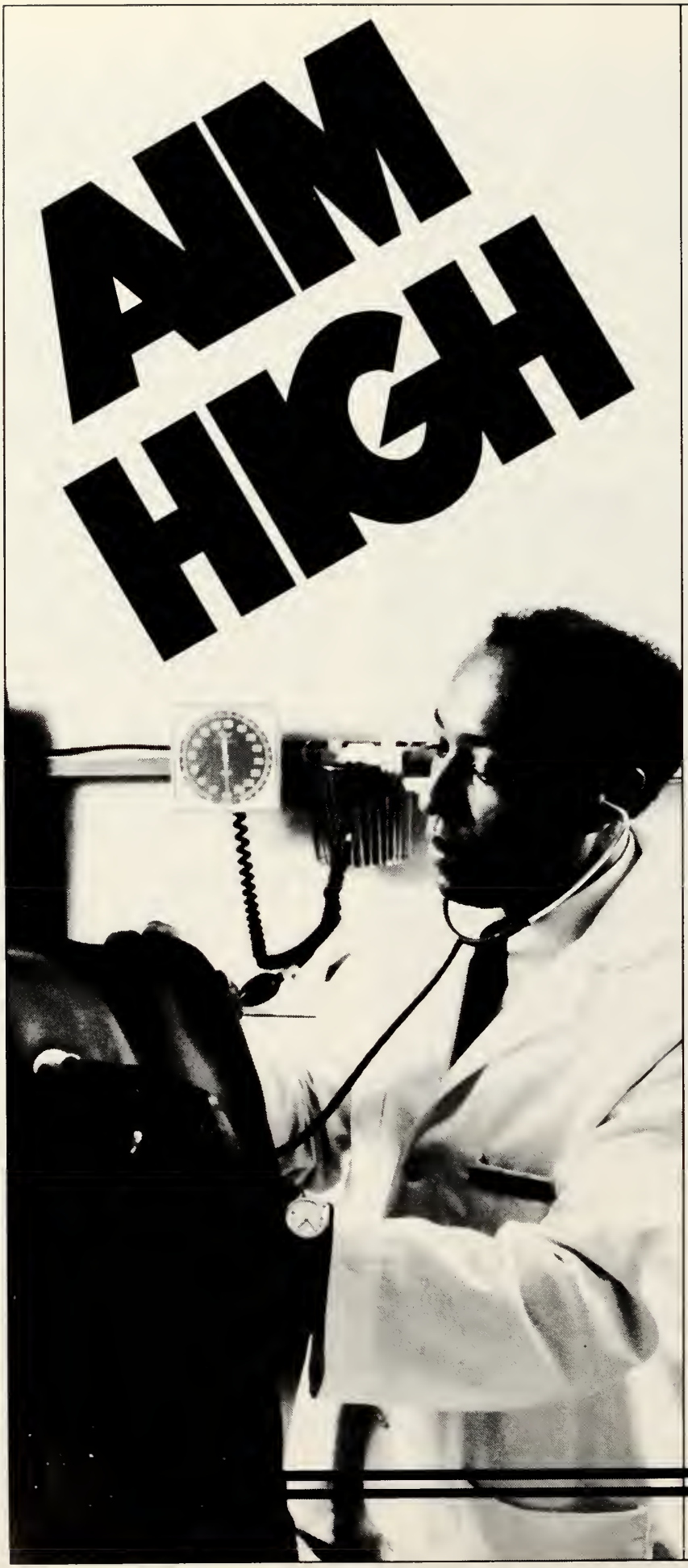
1050 square feet consisting of:
reception area, business office,
4 examining rooms and private office.

Option to purchase available

PLEASE CONTACT

DEFELICE PROPERTIES

433-4500 Mr. Renaud



SPECIALIZE IN AIR FORCE MEDICINE.

ER Physicians. Radiologists. OB/GYNs and other specialists! Today's Air Force gives you the freedom to specialize without the financial overhead of running a private practice. Talk to an Air Force medical program manager about the tremendous benefits of becoming an Air Force medical officer:

- No office overhead
- Dedicated, professional staff
- Quality lifestyle and benefits
- 30 days vacation with pay each year

Examine your future in the Air Force. Learn if you qualify. Call

USAF Health Professions
Toll Free
1-800-423-USAF

AIR FORCE

THE RHODE ISLAND MEDICAL JOURNAL

The Official Organ of the Rhode Island Medical Society
Issued Monthly under the direction of the Publication Committee

VOLUME I
NUMBER 1

PROVIDENCE, R. I., JANUARY, 1917

PER YEAR $2.00
SINGLE COPY, 25 CENTS

THE RHODE ISLAND MEDICAL JOURNAL HERITAGE

Ninety Years Ago
(May, 1901)

A paper entitled "The Relation of Mental Content to Nervous Activity" is offered by Professor E.B. Delabarre of Brown University. The essay attempts to unravel the obscure relationship between the contents of daily conscious life and the body's neural mechanisms. The author states, "Aside from a refuge in agnosticism, one must hold either that these processes are wholly subject to definite, unvarying, mechanical law; or that in whole or in part they are independent of law."

He concludes, "The substitution of a belief in causal law for a belief in freely choosing incalculable mental powers has been the condition of progress in every science. Always objection has been made in the name of common sense observation and of morality to every extension of this principle. But always the principle has triumphed without involving the unfortunate consequences predicted, and to the great advantage and progress of mankind. The same truth will hold in regard to psychology. The reduction of the phenomena it studies to definite law, the triumph of the theory of concomitance, will be found not to involve a degradation of man and a deterioration of morals, but on the contrary an enormous advantage. Our understanding of our mental life will be advanced. Our control over it in ourselves and in our fellows will increase. We will know better what we are and of what we are capable, and will thus be able to direct our endeavors to better advantage."

Another paper in this issue, written by a graduate pharmacist J.E. Groff, addresses "The Disagreement Between the Physician and the Pharmacist". Amongst other issues, the article explores the inexactness of many prescriptions written by physicians. The author states, "We have a National Formulary adopted and recognized by both the National Medical and Pharmaceutical Associations. In it are the formulas for all the commonly-used elixirs for example. This was designed for the very purpose of rendering it possible for the physician to obtain the same brand of elixir of calisaya in New York or San Francisco. Do you ever prescribe them?" (*Editorial Note: calisaya elixir is better known today as the bark of Cinchona calisaya, sometimes called yellow chinchona. This South American botanical product contains the following alkaloids: quinine, quinidine, cinchonine, and cichonidine. The substance is also called Jesuit's bark or Peruvian bark.*)

The author comments further: "It would lead to a better understanding and make your own work more satisfactory to yourselves if some kind of association of the two classes (ie, physicians and pharmacists) of men could be formed, a room secured and a time appointed that they may meet together."

Dr V.L. Raia of Providence authors a paper entitled, "The Dangers of Some Common Eye Diseases if Not Promptly and Properly Treated." The following diseases are considered in depth: purulent ophthalmia (gonorrheal ophthalmia and ophthalmia neonatorum), injuries of the eye globe, iritis and glaucoma. He concludes, "My purpose in writing this article has been to emphasize the im-

mediate danger of some eye diseases of common occurrence in general practice and to inculcate the necessity among physicians of a better appreciation of certain conditions of the eyes fraught with the gravest consequences."

Fifty Years Ago (May, 1941)

The two principal scientific articles are concerned with varicose veins and related conditions. SJ Goldowsky, MD, writes a paper on the modern treatment of varicose veins, discussing the three basic methods of relieving varicosities; by sclerosis, by compression, and by ligation. The article summarizes the anatomy and physiology of the veins of the lower extremity: the superficial, the deep and the communicating veins. The author cautions, "Before treatment is begun every patient should be studied carefully to eliminate other possible pathologic states, eg, syphilis, diabetes and peripheral arterial disease. Various tests, such as Trendelenberg's, to test venous competency are described. The author recommends the following classification of varicose disease: Group I, incompetent long saphenous vein with competent communicating veins; Group II, incompetent communicating veins without ulceration or brawny edema; Group III, incompetence of the communicating veins accompanied by brawny edema or ulceration; Group IV, incompetent short saphenous trunk; Group V, varicosities following deep phlebitis which are compensatory in nature; and Group VI, dilated veins and flares without incompetence of the main trunks or the communicating veins.

A second, related, paper by J.B. Sears, MD, is entitled "Ulcers, Phlebitis and the Thromboses. The author summarizes the clinical and pathophysiologic features of varicose ulcers and post-phlebitic ulcers (a late sequel of iliofemoral thrombophlebitis, so-called "milk leg"). Phlebitis is also considered in four categories: femoro-iliac thrombophlebitis; superficial thrombophlebitis in nonvaricose veins; thrombophlebitis in varicose veins; and peripheral deep thrombosis.

A.W. Eckstein, MD, reports on a verified case of tularemia, contracted locally from an infected rabbit, and treated with sulfanilamide. Tularemia, according to the author, was unknown in New England until 1929 when a North Scituate man, following contact with a dead rabbit, developed tularemia. In the same year, another case was identified in Massachusetts, also after contact with a rabbit. A few other cases were recorded in other New England states. No further Rhode Island cases were noted since 1929 although some dead rabbits had shown typical histological lesions of tularemia. The currently reported case was that of a 69-year-old male retired pharmacist who had gone rabbit hunting, shot a rabbit and immediately dressed it. Six days later he developed chills and fever, headache and general malaise as well as a few digital ulcers. Ulcer material was injected into guinea pigs and the test animals died; abundant numbers of Gram negative B. tularense were recovered. Agglutination tests for B. tularense showed progressively rising titers, reaching 1:2560 levels weeks after the onset of illness. In the judgment of the author, "Sulfanilamide undoubtedly shortened the length of this patient's illness."

An editorial summarizes the important events in the medical history of Newport, Rhode Island. The town was founded in 1636 by John Clarke, a Quaker banished from the Plymouth colony, and his colleagues. Clarke (1599-1676) himself had some training in the healing arts and often signed his name, "John Clarke, physician, of London." In subsequent years a succession of prominent physicians established their practices in this community, including such eminent practitioners as Benjamin Waterhouse and William Hunter.

The Newport Medical Society meeting proceedings are published and contain Dr W.S. Sherman's presidential address entitled, "Early Medicine and Surgery in Newport County".

This issue also contains an historical account of US Naval Hospital in Newport, Rhode Island.

There is brief editorial mention of a movement referred to as "Bundles for Britain".

Twenty-Five Years Ago (May, 1966 Issue)

The lead scientific article describes a new impregnation device for locating the site of gastrointestinal tract bleeding, written by RS Bray, MD. Because the localization of the bleeding site may at times elude the most meticulous and exhaustive investigation, the author discusses current diagnostic procedures which can serve to

resolve the problem. These technics include: fluoroscopy and radiology; newer methods of endoscopy; exploratory intubation; and the string impregnation test. Each, the author says, has its advantages and limitations. The original string technique entailed the swallowing of a silk or cotton thread attached to a weight for a distance of about 75 cm from the lips. This was allowed to stay overnight and then retrieved. A search was then made for bile and blood stains. A stain appearing about 40 cm from the proximal end of the thread suggested esophageal or cardial bleeding; 44 to 54 cm, lesser curvature bleeding; and 50 cm or more, duodenal bleeding. The author has modified the original string to a more elaborate, sheathed cord impregnated with barium so that its course can be visualized radiographically. The author summarizes his experiences in 37 patients and states that the procedure may be safely performed in the private office.

An article by R.H. Travis, MD provides general principles governing fluid-electrolyte therapy with a physiological analysis of the pathogenesis and treatment of edema. The article explores features common to the treatment of those diseases in which edema, dietary sodium restriction and diuretic administration are a component (nephrotic syndrome, congestive heart failure.)

An article by Drs H.F. Martin and H. Fanger considers the use of muscle biopsy in the determination of body electrolytes, hydration and acid-base balance. Such data, obtained from the vascular compartment may be insufficient in the evaluation of their distribution in the major body compartments. Data obtained from muscle biopsy and serum electrolytes, on the other hand, may furnish the necessary information. They conclude, "This must be confirmed by further investigation. A computer program eliminates tedious calculation and furnishes information of deviations from normal."

The lead editorial discusses the future of the Charles V. Chapin Hospital and proposes four rules to be observed: (1) The hospital should continue as a communicable disease center for the state; (2) its acute psychiatric facility should be maintained; (3) a mental health center should be established; and (4) the remaining space should be developed into an extended care facility.

Other editorials address problems in highway safety in Rhode Island, gastric resection in children, carotid body tumors, and some reflections of the brain drain, and particularly why third world physicians and other professionals are reluctant to return to their nations of origin after completing specialty training in the United States.

MEDICAL OFFICE SPACE
FOR RENT

WICKFORD PROFESSIONAL BUILDING
320 Phillips Street
Wickford, RI

Approximately 800 S.F.

High Profile Medical Building
Located Midway Between Kent
County and South County Hospitals

Lab and X-Ray Facilities
Ample On-Site Parking

For Information Contact
Mr. Caldarone

861-1818

YOCON®
YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

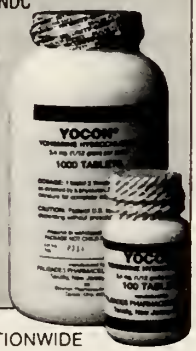
Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.



References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85

AVAILABLE AT PHARMACIES NATIONWIDE

PALISADES PHARMACEUTICALS, INC.
219 County Road
Tenafly, New Jersey 07670
(201) 569-8502
1-800-237-9083

VNA of Rhode Island

Physicians have trusted in the Visiting Nurse Association since 1900, for their experience, dedication and commitment in bringing health care home to thousands of patients each year.

Thanks to You
We Bring Health Care Home!

- skilled nursing
- private duty home care
- home infusion therapy
- VNA Hospice program
- home health aides
- pediatric services
- nutrition counseling
- rehabilitation
- durable medical equipment and supplies

331-8842
Member Agency United Way

HAYFEBROL™

allergy-relief formula
Sugar-Free

For fast relief of nasal and sinus congestion, sneezing, itchy and watery eyes due to hayfever and other allergic conditions. Can be used for sodium and sugar-restricted diets.

HAYFEBROL™
allergy relief formula
Sugar-Free
For fast relief of nasal and sinus congestion, sneezing, itchy and watery eyes and other respiratory allergies of the common cold or sinusitis. Can be used for sodium restricted diets.
FOR CHILDREN AND ADULTS
Alcohol-Free
Sodium-Free
Dye-Free
4 FL. OZ. (120 ml)

1-800-638-SCOT
1-401-942-8555

If not available in your area, order direct.

Scot-Tussin Pharmacal Co., Inc.
Cranston, RI 02920-0217

For Rx only:
Tussirex SF, 10 mg. Codeine/5 ml.
Alcohol-Free
Natural Coloring

INFORMATION FOR AUTHORS

Manuscripts: Manuscripts will be accepted for consideration with the understanding that they are original contributions, have never been published or submitted elsewhere, and are submitted only to the *Rhode Island Medical Journal.*

Specifications: Manuscripts must be original typed copy (not all capitals) on 8½ × 11 inch firm typewritten paper, double-spaced throughout (including title page, text, acknowledgments, and references) with margins of at least one inch and using but one side of each page. Tables, charts, and legends should be submitted separately from the text, and referred to by number (ie, Fig. 1) within the text. Subheadings must be inserted at reasonable intervals to break the typographic monotony of the text. Pages must be numbered consecutively. Italics and boldface print are never used except as subheadings.

Abbreviations: The *Journal* attempts to avoid the use of jargon and abbreviations. All abbreviations, especially of laboratory and diagnostic procedures, must be identified in the text.

Title Page: All manuscripts must include a title page which provides the following information: (1) a concise and informative title; (2) the name of the author or authors with their highest academic degree (ie, MD, PhD); (3) a concise biographical description for each author which includes specialty, practice location, academic appointment, and primary hospital affiliation; (4) mailing address and office telephone of principal author; (5) mailing address of author responsible for correspondence or reprint requests; (6) source of support if applicable.

Illustrations: Authors are urged to use the services of professional illustrators and photographers. Drawings and charts should always be done in black ink on white paper. Clear, black and white 5 × 7 glossy photographs should be submitted, and such illustrations numbered consecutively and their positions indicated in the text. Original magnifications should be noted. Illustrations defaced by handwriting or excessive handling will not be accepted. The figure number, indication of the top, and the name of the author must be attached to the back of each illustration. Legends for illustrations should be typewritten on a single list, with the numbers corresponding to those on photographs and drawings. Recognizable photographs of patients are to be appropriately masked and must carry with them written permission for publication. Special arrangements must be made with the editors for excessive numbers of illustrations. Color plates are not acceptable.

Identification of Patients: Names, initials should not be used. Use of numbers is a preferable form of identification.

Reprints: Because of cost considerations, reprints are not provided routinely to the author(s). Reprints may be ordered separately (100 copies minimum order) and printing costs will be charged to the author(s).

Responsibility: Manuscripts are subject to editorial revisions as deemed necessary by the editors and such modifications will be undertaken so as to bring them into conformity with *Journal* style, which is in compliance with the editorial standards of the AMA. However, neither the editors, nor the publishers, nor the Rhode Island Medical Society will accept responsibility for statements made or opinions expressed by any contributor in any article or feature published in the pages of the *Journal.*

Permission: When material is reproduced from other sources, full credit must be given both to the author and publisher of these sources. Where work is reported from a governmental service or institution, clearance by the appropriate authority must accompany the manuscript.

References: To conserve space and expense, references should be limited to those essential to the subject. The editor reserves the right to reduce the number when it is deemed necessary. The references must be double-spaced and numbered as they appear consecutively in the text, with their positions clearly indicated in the text. All references must be checked to assure complete accuracy. Each journal reference must include the full name of the author(s); complete title of paper; name of publication; volume number; issue number; first and last page of paper; and date (year, month, and day as indicated). Each book reference must include the full name of author(s), editor(s), or both, with initials; title of book; edition; publisher; location; year of publication, volume (if given); and page number. If the reference is to a chapter within a book, the author of the chapter, if different than the author of the book, and the title of the chapter (if any) must be provided.

Correspondence: All correspondence relating to publication should be addressed to: Managing Editor, *Rhode Island Medical Journal,* 106 Francis Street, Providence, RI 02903.

A BRIGHT IDEA TO START WITH...

180mg

Calan® SR

(verapamil HCl) 180 mg

SUSTAINED-RELEASE **CAPLETS**

G.D. Searle & Co.
Medical & Scientific
Information Department
4901 Searle Parkway
IL 60077

SEARLE